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Journal of Educational Research

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VOL. VIII NOVEMBER, 1923 No. 4

CONTENTS

		Page
A STUDY IN READING DIAGNOSIS	Ruth Geiger	283
RECENT PROGRESS IN EDUCATIONAL RESEARCH	W. W. Theisen	301
MEASUREMENT OF A NEW PHASE OF READING	Clifford Woody	315
CHILDREN'S EMPTY AND ERRONEOUS CONCEPTS OF THE COMMONPLACE	Flora Scott and Garry C. Myers	327
A SELF-RATING SCORE CARD FOR SECONDARY-SCHOOL PRINCIPALS	Frank C. Touton	335
EDITORIALS		346
REVIEWS AND ABSTRACTS		349
NEWS ITEMS AND COMMUNICATIONS		359
EDUCATIONAL RESEARCH ASSOCIATION		373

Entered as second-class matter at the Post Office at Bloomington, Illinois under the act of March 3, 1879.

Journal of Educational Research

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Public School Publishing Co.

Official Organ of the Educational Research Association

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The JOURNAL OF EDUCATIONAL RESEARCH is published at Bloomington, Illinois, monthly, except July and August by the Public School Publishing Co. The subscription price is $4.00 $4.20 in Canada or Mexico; and $4.50 in other foreign countries.

The editorial office is at Columbus, Ohio. Address all communications on editorial matters to B. R. Buckingham, Director of Bureau of Educational Research, The Ohio State University, Columbus, Ohio.

Subscriptions and all communications about reprints or other business matters should be addressed to the Public School Publishing Company at Bloomington, Illinois.

JOURNAL *of* EDUCATIONAL RESEARCH

Volume VIII NOVEMBER, 1923 Number 4

A STUDY IN READING DIAGNOSIS

RUTH GEIGER
Sands School, Cincinnati, Ohio

The following study reports an attempt to diagnose the reading difficulties of a third grade and to formulate remedial measures which would meet the individual needs of the pupils. Standardized reading tests were used as the basis of diagnosis. As usual, it was observed that a child ranked higher on one reading test than on others. It was assumed that if one could explain these inconsistencies, one would be able to understand the reading difficulties which the child was facing and would be placed in position to formulate remedial measures.

The following tests were given in November and December: the Monroe Standardized Silent Reading Test; the Courtis Silent Reading Test; the Thorndike Visual Vocabulary Scale; and the Gray Standardized Reading Paragraphs. The results of these tests are shown in Table I. This table presents the raw scores in all the tests, together with the class medians and norms. Gray's Oral Reading Test was given only to those whom the teachers thought to be problem cases.

In the first three tests—Monroe, Courtis and Thorndike—the medians, without exception, surpass the standards. The Monroe test shows a median of nine (9) in comprehension, and sixty-one (61) in rate, which are exactly the standards for the third grade in June. An advance of seven months can be calculated in both rate and comprehension since this test was given in November.

The Courtis test shows a distinct superiority in rate. The median of 150 not only exceeded the third-grade standard (113)

TABLE I. RESULTS OF READING TESTS
(NOVEMBER AND DECEMBER)

Pupils' Numbers	Monroe		Courtis			Thorndike	Gray
	Comprehension	Rate	Rate	Questions Answered	Comprehension		
1	26	123	197	40	100	9	
2	13	67	142	43	77	6	
3	13	76	155	37	91	5½	
4	13	95	189	28	100	4½	
5	12	69	89	27	88	ab	
6	12	76	133	28	96	4½	
7	12	90	161	26	87	5	
8	11	61	97	34	70	4−	
9	11	69	150	32	90	6	
10	11	76	150	35	97	6½	
11	11	76	151	38	64	6	
12	10	61	149	24	80	5½	
13	10	61	109	24	50	4½	65
14	10	69	185	21	83	5½	
15	10	76	161	31	80	4½	
16	9	61	132	27	82	5½	
17	9	61	197	20	33	4	
18	8	52	96	32	93	4½	63
19	8	61	92	29	74	6½	
20	7	69	191	23	85	4	
21	7	76	95	11	78	5½	
22	6	61	149	28	53	4−	71
23	6	61	147	30	0	4−	
24	6	52	ab	ab	ab	4½	76
25	5	52	197	27	0	4½	66
26	5	61	141	25	61	ab	77
27	4	36	167	16	67	5	
28	4	36	88	15	84	4	70
29	4	41	119	22	90	6	
30	3	36	156	18	78	4−	
31	3	69	189	15	64	6	75
32	2	24	120	17	94	6	
33	ab	ab	74	29	90	ab	
Median	9	61	150	27	82	5	
Standard	7.2	52	113	24	78	4	71

but the fourth (145) as well. The number of questions answered and the comprehension show more nearly standard results. The first at 27 is three above the third-grade standard (24) and three below the fourth (30). The second at 82 is four above the third-grade standard (78), and three below the fourth (85). The level of achievement is striking. In terms of months, especially, it takes on significance. Comprehension, the number of

questions answered, and rate exceed the standard by six, five, and ten months respectively.

In the Thorndike test the one point of advance beyond the standard implies eight months of progress. The class almost reached the fourth-grade norm (5.26).

No median appears in Table I for the Gray Standardized Reading Paragraphs since these paragraphs were given to only eight children whose reading problems remained unsolved after the first three tests. Such a group could not adequately represent the ability of the class. Of these eight records, four came out below the norm (71), and four at or above it. At this point a word should be said about the method used in connection with the Gray paragraphs. From the method of scoring proposed by Doctor Gray, one cannot conclude just what grade of ability the pupil has. The score merely indicates whether he is below, at or above standard for the grade he is in. This is due to the fact that several multipliers are given for the first paragraph, the one to be used depending upon the grade the pupil happens to be in at the time of the testing. By using a constant multiplier, 55, for the first paragraph, and by adjusting the norms in accordance with this change, we have sought to obviate the difficulty.

Interpretation of Results

According to the Monroe test, 19 pupils, or 59 percent, were at or above standard in comprehension and 27 pupils, or 84 percent, in rate. On the other hand, according to the Courtis test, 20 pupils, or 63 percent, were at or above standard in comprehension, and 24 pupils, or 75 percent, in rate. A most admirable record exists in the Thorndike test of word reading, in which 26 pupils, or 87 percent, passed at or above norm.

In consequence of the November and December testing, the class was instructed in different groups as determined by reading ability. The chief aims of the corrective teaching were intelligent comprehension and a standard rate. Some of the more successful remedial measures for *group work* are given herewith.

Comprehension Exercises

1. When the meaning of a story has been acquired, the children attempt to divide the entire story into parts or large thought units. Changes in time, setting, or action naturally break the thought and assist the division of the story.

2. This may be followed by visualizing and naming the parts in the story without any attempt to designate the exact location of the divisions.

3. Exercises 1 and 2 may be combined. An opportune time for using this will come about the middle of the year.

4. Sentences are completed which require the thought to be gathered from a story.

5. The relation of the title to the central thought is found.

6. Problems are raised from the pictures, title, or opening sentences.

7. The extra word in a sentence is taken out. *Example*, "The pies gun are baking." "Gun" is the superfluous word which should be omitted or struck out.

8. The simpler exercises of the Thorndike test of understanding of sentences[1] (going by the name of A, B, C, etc.) serve as excellent seat work.

Rate Exercises

Only a limited amount of oral reading is permitted, since vocalization delays the movement of the eye.

1. Practice for ten minutes in rapid silent reading twice a week encourages the children to improve their record.

2. The children read silently for one minute. The teacher tests the comprehension of the passage read with ten questions.

3. Sentences written on the blackboard, with each phrase on a new line, increases the eye span.

The value of this procedure is shown in Figures 1 to 4, inclusive. In these figures the results of the administration of the Monroe and Courtis tests before and after applying remedial

[1] Thorndike, E. L. "The measurement of reading ability." *Teachers College Record*, 15:32-66, September, 1914.

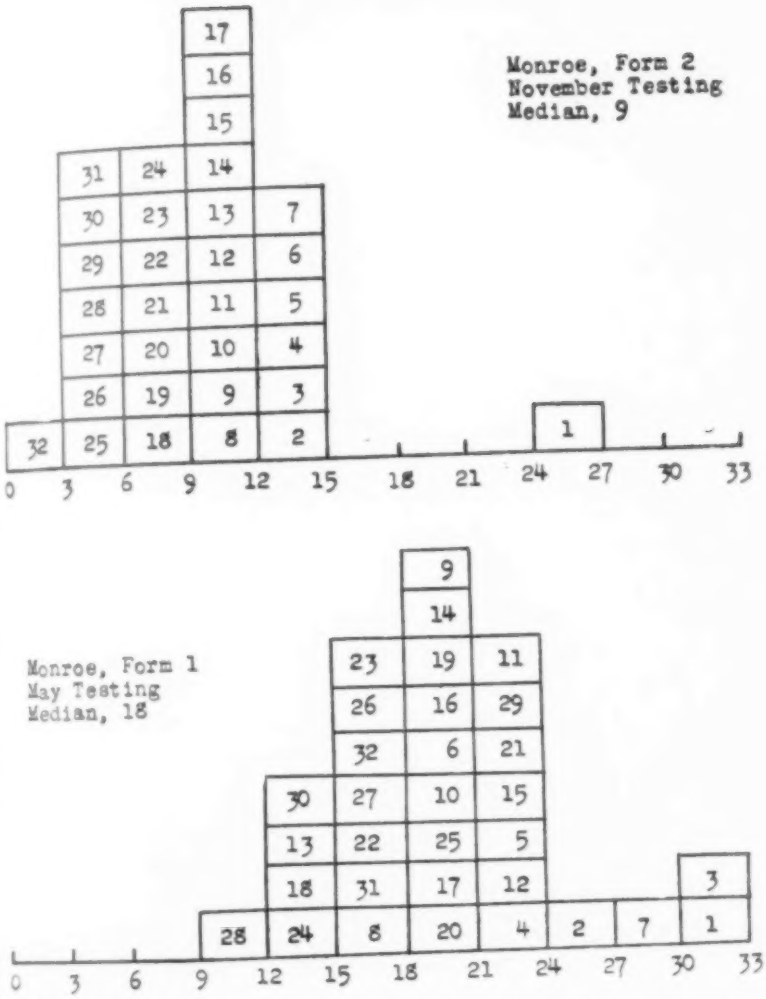


FIGURE 1. DISTRIBUTION OF PUPILS ACCORDING TO MONROE COMPREHENSION SCORES OBTAINED IN NOVEMBER AND MAY

measures are exhibited. The first testing, as has been indicated, took place in November. The second testing took place six months later, or in May of the following year. In comprehension, according to both the Monroe and the Courtis tests, the class medians increased during this six months' interval by nine points (see Figures 1 and 3). In the case of the Monroe test this increase amounts to a fraction less than one and one-half years of school progress; and in the case of the Courtis test, to exactly one and one-half years. Thus, with respect to comprehension, the Courtis and Monroe tests are in close agreement. They do not, however, agree as closely in respect to rate. According to Figure 2, the increase in rate in terms of the Monroe test was 37 points, or a gain of a little more than three and one-half years. Figure 4, however, shows that the increase in rate according to the Courtis test was but 30 points, or a trifle over two and one-half years' gain.

The Monroe and Courtis tests are presumed to measure the same things—rate and comprehension. Yet the means of securing these measures are so fundamentally different that they cannot be interpreted in the same way. The Monroe test measures rate and comprehension simultaneously. This simplifies the process, but gives a result which is not purely one or the other. On the other hand, Courtis calculates rate independently from comprehension; in other words another part of the test gives the measure of comprehension.

The Thorndike Visual Vocabulary Test measures a different phase of reading—the recognition of isolated words. Merely to classify words, as this test requires, embraces a less complicated process than apprehending units of thought from the printed page *en masse*. The four children (numbers 8, 22, 23, and 30) who were below the norm were unable to use phonics successfully as a tool in reading. And well may third-grade children apply their knowledge of phonics to these words, for many of them are unfamiliar to their reading vocabularies.

The Gray Standardized Reading Paragraphs make possible thorough investigations of individual difficulties through a list

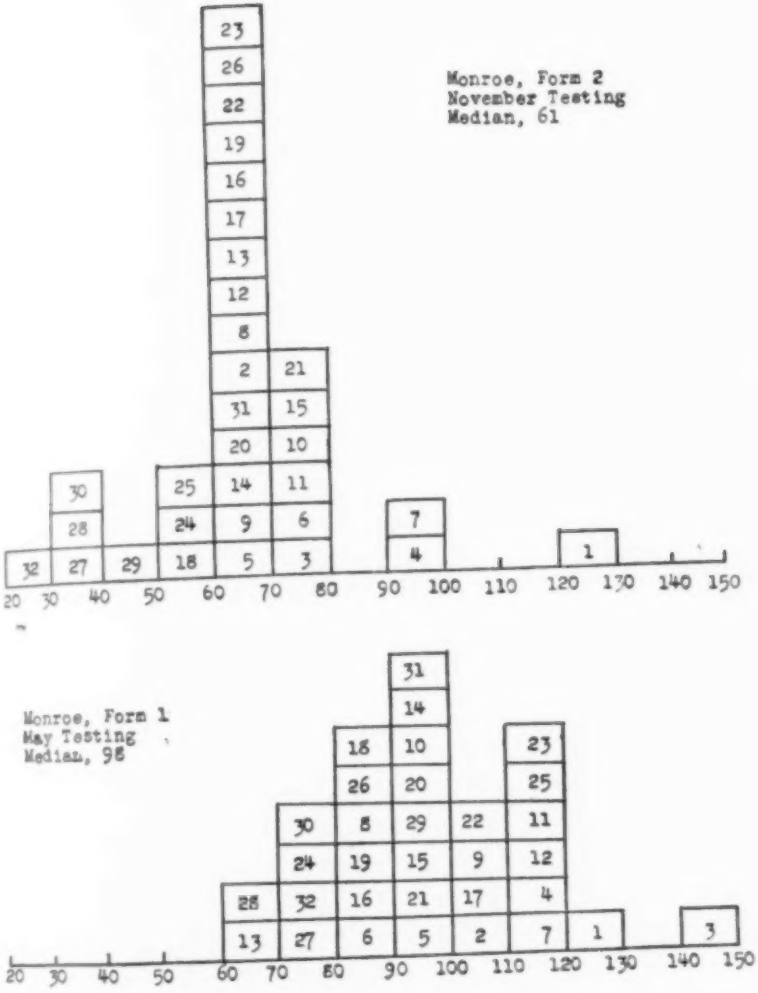


FIGURE 2. DISTRIBUTION OF PUPILS ACCORDING TO MONROE RATE SCORES OBTAINED IN NOVEMBER AND MAY

of type errors, characteristic of oral reading. The same in many instances, no doubt, carry over into the silent reading. In view of the fact that the Gray standardized paragraphs test oral reading, word recognition again stands out as the primary factor. The number of mistakes occurring in each paragraph together with the amount of time for reading, determines the score.

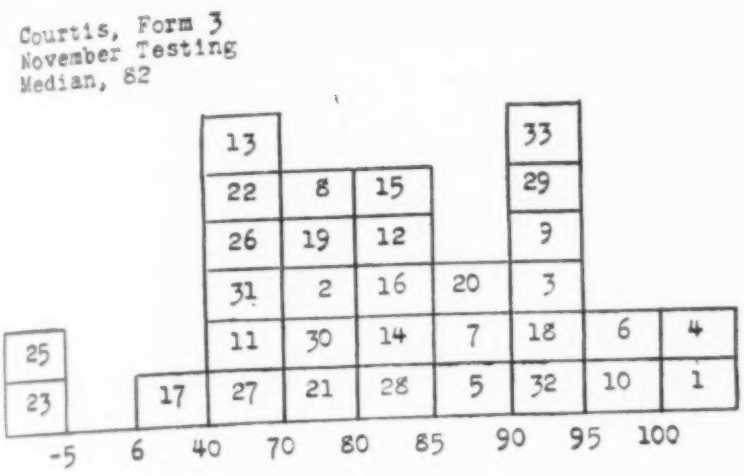
After a careful survey, the Thorndike test proves that the majority of the class have mastered some of the mechanics of reading which the Gray test appears to corroborate. Ultimately, however, the writer's problem resolved itself into *individual diagnosis with reference to rate and comprehension.*

Individual Diagnosis and Treatment

Number 13[2].—This girl is a real problem. Ordinarily, her comprehension is good when expressed other than orally, as for instance, in pantomine, cuttings, or even writing. There are two causes for her inability in oral expression; first, a highly nervous temperament; second, foreign parentage. These causes affect her reading in respect to substitutions, insertions, and omissions, as was proved by the Gray Oral Reading Test. Moreover, evidence points toward little coordination between her vocal organs and visual impressions. It is probable that her sensory-motor impressions do not coordinate properly with the motor centers of the brain. Her physical training teacher finds her incapable of doing third-grade exercises, and the writer has spent no little time teaching her arm movement. In silent as well as oral reading she substitutes, inserts, and omits. Faulty ideas result, and this fact is in all probability the cause of her low comprehension score in the Courtis test.

Remedial work.—Objective: to improve the accuracy of reading. 1. This pupil read orally each day until she made a mistake. The number of lines covered in this fashion became a constant source of interest to the child in that it represented her own record. 2. An intensive review was given the second-year

[2] The number corresponds to the one in the extreme left-hand column of Table I.



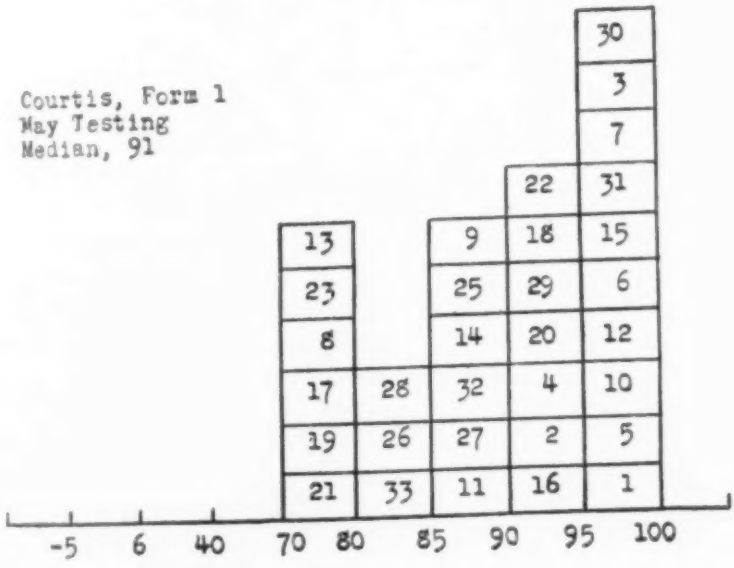
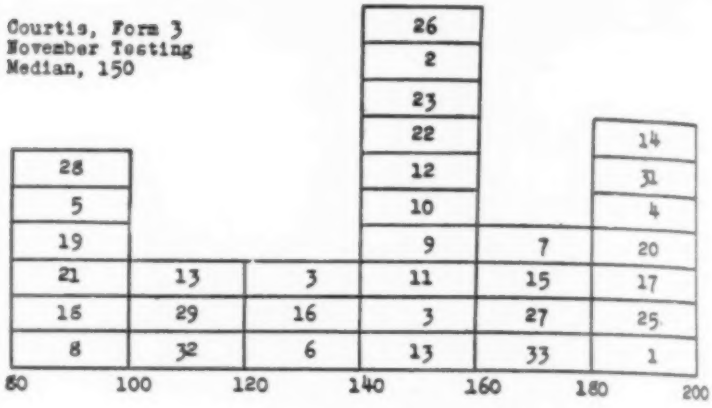


FIGURE 3. DISTRIBUTION OF PUPILS ACCORDING TO COURTIS COMPREHENSION SCORES OBTAINED IN NOVEMBER AND MAY



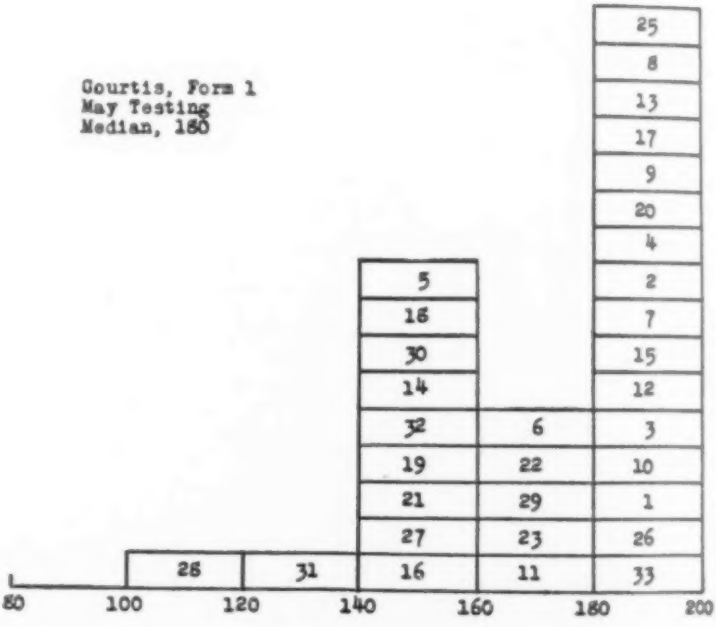


FIGURE 4. DISTRIBUTION OF PUPILS ACCORDING TO COURTIS RATE SCORES OBTAINED IN NOVEMBER AND MAY

phonics with additional word analysis, suitable to her ability. This was intended to improve recognition and recall of words. 3. The use of troublesome sounds in phonograms in a new setting afforded excellent practice. 4. A study of special endings, as, "cial," "cy," "ance," etc., was included among the remedial measures. 5. Frequent drill was given on confusing words, such as, "then," and "than," "come" and "came," etc. 6. Proper breathing exercises were thought to be necessary for rendering the thought more smoothly. 7. Descriptive material, woven into a narrative situation, may be utilized to advantage for intensive training in accuracy of comprehension. For example, a paragraph describes a little girl's doll house which her father had made and which she furnished. A detailed description is given of the furnishings and of their exact place in the house. Then the child is required to plan a doll house of her own like the original. The teacher supplies her with a box to be used for the house and with paper furnishings cut from magazines. Her comprehension is judged by the arrangement of the furnishings.

Figures 1, 2, 3, and 4 show how this pupil (No. 13) gained as a result of this special instruction. In Monroe comprehension, she made a gain of nearly a year; in Monroe rate, practically no gain; in Courtis comprehension, a gain of more than one year; in Courtis rate, a gain of three years.

Number 18.—This boy falls below the grade norm in rate of reading, yet his comprehension is superior for his grade. His score on the Gray Oral Reading Test is exceedingly low—about a second-grade score—due to the time limit used in administering the paragraphs. His reading is time-consuming; but, strange to say, the listener is not conscious of either halt or hesitation. The teacher is inclined to think there is a slow movement of his vocal organs over which he has no control. However, nine of Gray's paragraphs were remarkably well read, notwithstanding speed.

This laxness in rate has even carried over into his silent reading. Yet he is not a lip reader. The teacher strongly believes oral reading has had too prominent a place *for him* in his

early training. A lover of books, he has spent considerable leisure time reading at the same slow rate, which now constitutes our problem.

Remedial work.—Objective: to increase the rate of reading. 1. At a signal from the teacher he peeps into the reader, (page and lesson previously specified) for a second or two trying to remember a whole sentence. At a tap he closes the book again and attempts to give the sentence orally. This is a splendid opportunity to increase the eye span beyond the word group and to develop ear training. 2. Many sentences or directions are placed behind a drawn map or curtain. As it is pulled up sentence by sentence and quickly down again he gets only a glance. The child then tells what the sentence says or carries out the action. 3. Word groups and phrases written hastily before him and then immediately erased tend to encourage quick perception. 4. A story read or told by the teacher to a particularly interesting point is left to the child to complete under reasonable time pressure. As his speed justifies, the time is reduced. 5. He reads for two or three minutes and then stops at the teacher's signal, encircling the last word read. He then tells the teacher the last thought, so that she may have some assurance as to his comprehension. Then he continues to read from that mark. The procedure is the same as before and is repeated until the whole lesson is read. By glancing at the spaces between the marks the child can measure objectively the extent to which his rate has increased throughout the lesson. 6. Two or three timed (silent) readings of the same selection, at intervals of a week, stimulate rivalry with himself. A table of the time consumed for these readings is placed on a chart and posted in a conspicuous part of the room, as a reminder of his successive accomplishments.

According to the results of both the Monroe and Courtis tests, the improvement in reading rate was one and a half years. Comprehension showed a gain of almost one year in the Monroe test, but no gain in the Courtis.

Number 22.—This is a case where the child attaches little meaning to the subject matter of reading material. The visual perception comes to him quickly but without much content. Evi-

dently his reading selections and books have not been in keeping with his own interests. Reading does not appeal to him aside from the fact that it is one of the subjects making up the curriculum. Consequently, all his reading is limited to that which he does at school. His word recognition and pronunciation, however, are quite normal; his score in the Gray Oral Reading Test met the standard for the grade.

He has a meager vocabulary as is indicated by his score of 4– on the Thorndike Visual Vocabulary Test. But for this fact his high rate score would lead one to believe that he consciously skimmed the selections instead of reading them to the best of his ability. In his case, however, the lack of understanding and of thought associations appears to have induced a high rate score. Although it is generally contended that there is a direct mutual relationship between rate and comprehension, this is one case where they do not correspond.

Remedial work.—Objective: to improve comprehension. 1. Extensive reading of short, simple stories do much to improve the quality of reading for thought content. 2. Questions pertaining to the selection serve as a guide throughout the silent-reading lesson. 3. Before attacking the lesson, the pupil tries to set up reading problems, using for this purpose the title or any pictures which may accompany the selection. He also sets up additional problems as opportunity presents itself during the reading. 4. He lists and names the consecutive units in a story. These are organized into three large divisions—the beginning, middle, and end—introduction, climax, and conclusion. 5. He decides on the essential features in the story with well founded reasons. 6. Who is the leading character? What is the main thing he or she did? Such questions, with others including subordinate characters and events, prepare the trend of thought toward values. 7. Word study is introduced consisting of synonyms and antonyms; prefixes, suffixes, and stems. 8. The pupil underlines all the familiar word groups or phrases in a selection, the meanings of which are perfectly clear to him. 9. By some mark or sign of indication he classifies a miscellaneous list of words with reference to meaning. The words related in

thought bear the same number which is indicated by the child for each set. For instance,

Soup,	shoes,	peas,	canary,	leather,	wings,	eyelets
1	2	1	3	2	3	2
Feathers,	salt,	strings,	soles,	tail,	meat,	sings
3	1	2	2	3	1	3

The improvement in the case of this pupil was remarkable. In comprehension according to the Monroe test he gained one and a half years; and in rate according to the same test his gain was five years. According to the Courtis test the gain in comprehension was more than two years, and the gain in rate almost a year.

Number 25.—The comprehension of a selection appears to mean nothing to this child. He sacrifices thought to rate, thereby deceiving himself. Strange to say, he reads with apparent interest, too. The Visual Vocabulary Test together with his everyday work gives full evidence of an applicable knowledge of phonics and words. An impediment in his speech interferes with oral reading and is, no doubt, partly the cause of his low score in the Gray Reading Test. With him, however, each word serves as a single unit in his oral reading, and he frequently substitutes and omits.

Words, according to this child's habit of reading, assume no more significance in context than in a list. They involve but little thought association. The single word itself, however, offers no handicap. The chief difficulty of this pupil is in interpreting connected thought from the printed page.

Remedial work.—Objective: to bring about careful, slower reading for adequate comprehension. 1. Very short, simple stories of his own particular liking are given him to read. He reproduces the thought by: (a) telling or writing the story; (b) pantomine or dramatization; (c) illustrating the main thought in a drawing, cutting, or painting; (d) answering questions on the story; (e) working the story out on the sand table. 2. He catches the phrases in a sentence, one at a time, giving them from memory. Before finishing one he refers to the sen-

tence for the next phrase, so as to produce an expressive sentence. 3. Short newspaper accounts or magazine articles, adapted to the child's interest and vocabulary, furnish material for phrasing. He uses vertical bars to indicate the phrases, much as measures are indicated in music. 4. Word groups from the reading lesson are listed on the blackboard. He tells their use in the sentence, and how they are related to the rest of the story. 5. Disarranged phrases in a sentence introduce the puzzle element. To build them in proper sequential order requires ability to interpret interrelated thought. 6. He finds the parts in the story that express honor, humor, fidelity, excitement, suspense, sympathy, anger, or happiness; that portray the most vivid pictures; that lend themselves easily to dramatization; etc. 7. He is induced to read with certain purposes in mind, such as: (a) the persons in the story; (b) what type of character each one is; (c) how the events in the story were influenced by certain characters; (d) how the actual events might have been effected by a different move on someone's part. 8. By way of review, new titles are invented for the more familiar stories. A discussion follows as to their appropriateness. 9. Supplying words in context calls for both the understanding of the words and close scrutiny of the text. Verbs and modifying words omitted from the text are listed promiscuously in a column at one side. The child then selects the word which seems to suit the idea. 10. After reading a lesson, he illustrates the thought following specific written directions. The reading of these directions adds to his practice in silent reading.

An unusual record of improvement presents itself in this case. According to the Monroe test, there was a gain in rate of more than five years and a gain in comprehension of more than three years. According to the Courtis test there was a gain of three and a half years in comprehension. Although the Courtis test brings out a slight loss in rate—still leaving it at the sixth-grade norm—it may be well lost for the sake of such splendid comprehension gains.

Number 28.—This girl gets little thought from her reading. The teacher attributes this to her slow method—the word method.

She covers such a small amount by this sort of reading that the thoughts she derives amount to little compared with the grade norm. In the case of this pupil, rate demands attention because her slow reading diminishes the number of ideas obtained and the connections between them.

Her score of 4 in the Thorndike Visual Vocabulary Test shows that she could not do as well as the class in general, even when sufficient time was allowed. The Gray Oral Reading Test shows that she fell only a little below average ability. By reason of this, the teacher concluded that the child is ear-minded for, contrary to custom, her silent-reading rate falls much below her oral rate. It was anticipated, that due to mental incapacity, there would not be immediate response to training.

Remedial work.—Objective: to develop ability in more rapid silent reading. 1. She finds such sentences in the story as explain the action of the pictures. A time limit, suited to her ability is allowed. 2. Short drills are given on monosyllabic words and others occurring frequently in the reader. 3. Combining these words with word groups as they come up in the lesson tends to increase the eye span. 4. Regular practice in syllabication and phonic analysis of long words facilitate independent recognition in reading. A broader study of the phonic elements is made. 5. The teacher designates the page, and reads the first word or two of a sentence. The child is allowed thirty seconds to find and read the sentence to herself. She then gives an interpretation of its meaning. 6. Within a specified time she reads the word at the beginning or end of each line on the page. 7. The child searches for various items in the story as she reads under pressure of time control, e.g., climax, persons, objects, places (various settings). 8. Word groups which give time, color, place, sound, and movement are found in a timed reading. 9. Word groups from a familiar lesson are listed on the blackboard. One word is omitted from each group as shown by a blank space. She reads as many as she can recognize in one minute, supplying the omitted words. 10. She makes a booklet of known phrases that tell what, when, where, and how. These

are cut from magazines. As her reading power develops, the same remedial measures are applied as in the case of Number 18.

The Monroe test results show one year progress in both rate and comprehension. The Courtis test, too, shows one year progress in rate with practically no progress in comprehension. This being an exceedingly stubborn rate case, it gratified the teacher to increase the child's rate without reducing her comprehension.

Number 31.—This boy's trouble lies in the fact that he gets little thought from reading. In the first place, his high speed does not permit him to do careful, thoughtful reading. His conclusions from the daily reading lessons are generally erroneous. But referring to the lesson in the book a second time for these points, he never fails to get the correct idea. All this applies only to his silent reading.

The visual vocabulary test and oral reading scores are indexes to his excellent ability in word mastery and in mechanics of reading.

Remedial work.—Objective: to develop more careful silent reading for the benefit of comprehension. 1. After the first reading of a selection, (a) he vies with others in the number of thoughts he can remember, and (b) he tries to beat himself by keeping a record of the number of ideas retained at the first reading and the number at the second, which may be a week afterwards. 2. About ten exercises similar to the following comprise a vocabulary test: *oak, larch, birch, alder, willow.* These words are selected from the basic text. Each separate line contains five words similar in character. After the child recognizes and generalizes each set of words he is to add two of like nature on each respective line. The words *maple* and *walnut* might be correctly added to the line above. Thus, each new line represents something different—as, gems, food, animals, clothing, birds, furniture, and so on indefinitely. Counting a score of five for each supplied word arouses spirited interest. 3. Ten words, again chosen from the basic text, are placed on one line. Two, showing particular relationship to one another, stand outside of the parentheses which enclose the rest of them. The latter make up a miscellaneous list, except for two words that stand in the

same relationship to one another as do the two outside of the parentheses. These are to be indicated by underscoring. For example, flax, linen, (table, potatoes, wheat, rubies, stalk, bread, gold, sheep). 4. The pupil reads the story once for the purpose of reproducing it. By questioning, the teacher brings out the key sentences, thereby stressing the important parts. In reproducing the story afterwards, he has a cue for distinguishing the important from the unimportant. 5. After reading a number of stories, he finds those that are related to each other and also determines in what ways they are similar. 6. He reads anecdotes and jokes. He relates them for the purpose of entertaining the class.

This record also reveals an unusual instance of progress. In Monroe comprehension, he made a gain of two years; in Monroe rate, a gain of three years; in Courtis comprehension, a gain of three and a half years. While the Courtis rate reveals a decided falling off, his speed still approaches the fourth-grade norm. A remarkable comprehension, creditable for a sixth-grade child, compensated for the loss in rate. The objective appeared to have been accomplished.

Due to absence, Numbers 24 and 26 had taken but two tests when the Gray test was given. This test definitely settles facts as to their standards of reading, which tally with their daily work. Their ability equals the standard of the class, permitting them to share the group lessons without any individual measures. Number 33 needed particular attention beyond the group work.

At no time in the school year did the class number less than forty-five. This represents a combination of an A and B group —a rather arbitrary rating made after the first five weeks of school. The whole forty-five could not be included in this study for such reasons as late entries and transfers. Only the allotted time of 250 minutes per week was spent in reading.

Success came through careful, thoughtful diagnosis of all problem cases and an application of such remedial measures as seemed likely to meet each child's difficulty. This required the setting up of a clearly defined goal toward which the teacher directed her every effort.

RECENT PROGRESS IN EDUCATIONAL RESEARCH*

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INSTRUCTIONAL RESEARCH

The testing movement.—The testing movement which has received the greater share of research worker's attention during the past several years has reached a period of reflection. The situation in the fields of intelligence testing is well expressed in a statement by Chapman: "It is the irony of fate that those who, five years ago, were attempting to overcome the scepticism of practical school men with reference to mental and educational tests should within so short a period have to warn the erstwhile sceptics that they are now putting too much faith in the instruments which such a short while back were the objects of their distrust."[1] We have been putting on the brakes in order to determine what it is we are testing and how reliable our tests are. Such studies as those of Franzen,[2] Gates,[3] Root,[4] Stenquist,[5] and others will, undoubtedly, result in a better understanding of the subject.

This same spirit of reflection is making itself evident in the tests of educational achievement. We are beginning to realize that many of our tests do not measure all that we thought they did and that their reliability needs improvement. We are beginning to fear that a test measures some specific ability or combination of specific abilities rather than general ability in the subject. The outcome of this will probably be that a large number

*Presidential address, Educational Research Association, March, 1923.

[1] Chapman, J. Crosby and Dale, A. Barbara. "A further criterion for the selection of mental test elements." *Journal of Educational Psychology*, 13:267-76, May, 1922.

[2] Franzen, Raymond. "Attempts at test variation." *Journal of Educational Research*, 6:145-58, September, 1922.

[3] Gates, Arthur I. "The correlations of achievement in school subjects with intelligence tests and other variables." *Journal of Educational Psychology*, 13:277-85, May, 1922.

[4] Root, W. T. "Correlations between Binet tests and group tests." *Journal of Educational Psychology*, 13:286-94, May, 1922.

[5] Stenquist, John L. "Unreliability of individual scores in mental measurements." *Journal of Educational Research*, 4:347-54, December, 1921.

of tests designed primarily to diagnose specific teaching needs will soon be devised. Instead of a general test of reading, for example, we shall have several kinds of tests in the field, each testing a certain phase of reading ability. Woody's paper, "A New Phase of Reading Testing," presented before this association was an illustration of this point.

Statistical methods.—In the field of statistical methods there is an evident tendency toward simplification of procedure. This desirable tendency is exemplified by the discussions of Holzinger, Wood, Courtis, and Otis before the Educational Research Association meeting held in Cleveland.[6]

Perhaps the most significant *article* of the year dealing with statistical methods is that of Toops and Symonds.[7] Their analysis of the A.Q. procedure is a very timely and necessary contribution to our knowledge of the limitations and dangers attending the indiscriminate application of the Accomplishment Quotient as a measure of success in learning. Such critical examinations of our statistical methods are to be welcomed.

At this point a word on the subject of correlations may not be out of place. If we are not actually in a dilemma, at least some highly interesting questions are raised by the published and unpublished data on correlations. We are concerned about the reliability of the data and conclusions based upon them. The low correlations are particularly interesting. Correlations between different tests in the same subject, between tests in different subjects, and between achievement and so-called intelligence are frequently low. Woody has recently found a correlation between the Henmon Latin Vocabulary Test and the Henmon Latin Translation Test of 0.33, a correlation of 0.29 between "problems" and "equations and formulæ" of the Hotz Algebra Scales, and a correlation of 0.22 between the Briggs English Form Test and the Henmon Latin Translation Test.[8] Franzen

[6] *See* Report of annual meeting. Cleveland, 1923. *Journal of Educational Research*, 7:273-76, March, 1923.

[7] Toops, Herbert A. and Symonds, P. M. "What shall we expect of the A.Q.?" *Journal of Applied Psychology*, 12:513-28 and 13:27-38, December, 1922, and January, 1923.

[8] In an unpublished study at the University of Michigan.

reports correlations of 0.26 and 0.19 respectively for the Monroe and the Burgess tests with the Thorndike-McCall reading tests and 0.48 between Monroe and Burgess.[9] Gates reports a correlation of 0.7 or higher between a single test of reading and a composite of several reading tests, while the mean intercorrelation of single tests was about 0.5.[10] More recently Gates has presented figures showing rather low intercorrelations between various achievement subjects and between subjects and intelligence.[11]

In so far as the tests are reliable the correlation figures point to either a much higher inherited specialization of abilities than has been generally held to be true, or to a low practice level of the functions tested. Gates has called attention to both of these points and has cited some evidence in support of each.[12] Franzen has also cited some evidence to show that correlation can be raised by practice.[13] Additional evidence is needed to establish the exact effect of training and selection upon our correlations. We should know what difference it makes whether the children had notably bad teaching over a period of years. Possibly correlations of 0.5 obtained in rural districts are just as significant as correlations of 0.7 in university schools. If it should prove to be true that such correlations are materially influenced by training and selection, it follows that comparisons of the reliability of tests based upon different selections of pupil material are untrustworthy and that many of the conclusions presented in our educational literature based upon correlation data are erroneous. To the extent that low correlation is due to *high specialization* of native abilities, we have been unduly severe in criticising tests which failed to correlate well with other tests. To the extent that school abilities are *not specialized* and to the extent

[9] Franzen, Raymond. "Attempts at Test Validation." *Journal of Educational Research*, 6:145-58, September, 1922.

[10] Gates, Arthur I. "An experimental and statistical study of reading and reading tests." *Journal of Educational Psychology*, 12:445-64, November, 1921.

[11] Gates, Arthur I. "The correlations of achievement in school subjects with intelligence tests and other variables." *Journal of Educational Psychology*, 13:277-85, May, 1922.

[12] Gates, Arthur I. *Loc. cit.*

[13] Franzen, Raymond. *Loc. cit.*

that their correlation is influenced by practice, we may employ correlation as a measure of teaching success. Good teaching would be accompanied by high correlation and poor teaching by an absence of correlation.

On the other hand if school abilities are highly specialized and their correlation is *uninfluenced* by practice, and if we still find that reliable tests of these abilities fail to correlate with so-called "general intelligence," we are faced with the problem of determining whether intelligence is really "general" or whether it is a collection of highly specialized intelligences. Evidence seems to point in the latter direction.

Curriculum research.—The outstanding contributions in the field of the curriculum are Bobbitt's study at Los Angeles and the *Yearbook of the National Society for the Study of Education* on social studies. Bobbitt's study, while not strictly of a research character, is, nevertheless, a keen attempt to determine the specific aims of instruction through a process of detailed examination and analysis. It may be the forerunner of a considerable search for material that will demonstrate the *desirability* and contribute to the *possibility* of achieving some of the ends proposed. Both the Yearbook and Bobbitt's study represent the most recent progress in the direction of the application of the *functional* test to curriculum making. They are in line with such studies as: Ayers and Anderson in spelling; Thorndike in vocabulary; Koos in handwriting; Charters in language; Wilson, Woody, and others in arithmetic, and Rugg and Clarke in algebra; all of which emphasize the need of the development of the sociology of various branches as well as the psychology.

Research in reading.—There have been more contributions in the field of reading during the past few years than in any other subject of the curriculum. It is the one subject in which we feel that we are really getting results. The studies of method and of content have been carried far enough to give us somewhat of a scientific technique in methods of teaching reading and a scientific notion as to the values of different materials. To review the work in reading adequately would require a paper in

itself. The members of this group are sufficiently familiar with what has been done to make that unnecessary. There is one point, however, that should not escape our attention: *The present country-wide interest in the problem of improving reading instruction is the direct result of the research movement.* As a result of the stimulus provided by the research workers, school men and women are reconsidering their objectives. They are questioning their methods and scrutinizing the course of study. What more flattering compliment could research workers ask than the actions of the rank and file? Critics, who but a few years ago maintained that tests would result in formalized teaching of facts and nothing more, must agree, if they have observed at all, that quite the contrary has happened.

Evaluation of remedial measures.—Just now there is need for experimental evaluation of practice exercises and other remedial measures. When unsatisfactory conditions are discovered the most natural method of finding a suitable remedy is through the expensive trial-and-error process. The resourceful thinker lists various possible remedies and immediately some one begins to apply them in the hope that the desired results will be forthcoming. We need to know what results can be secured through a given procedure, under what conditions they can be secured, and what foundation children must possess before they can profit from a given type of exercise.[14]

Studies in learning.—We should not lose sight of the need of research in learning under controlled classroom conditions. There has been a sufficient amount of research of this character in the past few years to indicate something as to what may come out of it. Hosic's findings in favor of the positive treatment by wholes method of teaching literary selections,[15] Germane's

[14] Since this was written Miss Nila B. Smith, assistant supervisor of Primary Grades in Detroit, working under the direction of Mr. S. A. Courtis, has published the results of an experiment to determine the effectiveness of practice tests in teaching beginning reading.

Smith, Nila B. "An experiment to determine the effectiveness of practice tests in teaching beginning reading." *Journal of Educational Research*, 7:213-28, March, 1923.

[15] Hosic, James F. *Empirical studies in school reading.* New York, Teachers College, Columbia University, 1921. 174 pp. (Teachers College, Columbia University, Contributions to Education, No. 114.)

study of the controlled summary,[16] O'Brien's experiment in the development of speed,[17] and Woody's comparison of oral and silent reading of poetry[18] are illustrations of what is meant.

Need of determining what pupils retain.—Little research has been directed toward the scientific determination of what pupils ultimately retain as a result of the subjects or courses taken. Just what *must* they retain in the form of knowledge, habits, or skill? How much *do* they retain one, two, or three years later? Or is it sufficient that pupils shall have been familiar with certain materials for a short period of a few months or years? If a subject is not merely a preparation for another subject to follow and has thus accomplished its object, there must be a measurable residue several years later. Are we satisfied with it? It is conceivable that answers to these questions might hasten radical revisions of our course of study.

What are some necessary next steps in connection with instructional research? Some thought must be given to the organization of instructional research in the very near future. Classroom practice is lagging altogether too far behind. Our success will be measured ultimately not by the advanced discoveries in statistical method but by the percent of teachers who are making good use of the fruits of research. How to get every teacher, every principal, every superintendent at work on the problem of greatest import to him should be our problem. Much of our advanced research is falling upon barren soil because there has been too little conscious effort to prevent a hiatus between the classroom teacher and the research worker. We are too easily contented with having developed methods of research and too little concerned about getting *all* teachers to apply *some* methods of research. The teacher's failure must be charged to the re-

[16] Germane, Charles E. "Outlining and summarizing compared with rereading as methods of studying." In *The Twentieth Yearbook of the National Society for the Study of Education* (Part II). Bloomington, Illinois: Public School Publishing Company, 1921. 103-13.

[17] O'Brien, John A. *Silent Reading.* New York: The Macmillan Company, 1921. 273 pp.

[18] Woody, Clifford. "The effectiveness of oral versus silent reading in the initial memorization of poems." *Journal of Educational Psychology,* 13:477-83, November, 1922.

search worker just as much as the pupil's failure is now charged to the teacher.

There must be a searching for the most effective methods of organizing research activities and the best means of discriminating the fruits of research. The findings of research must be translated into simple lessons for the teacher. More informal research needs to be developed. Ways and means of persuading supervisors, principals, and teachers to shift their major interest from the test to the child must be found. It is of some interest to know, how high or low the class score was and what the variability was. But the study of the child in the light of all his tests is more essential to the classroom teacher. An important question to be answered by the teacher is how many of her pupils have the same weaknesses. When she reaches this point in her thinking she is ready to re-examine what she has been doing. Myers' study of erroneous concepts in history and geography presented elsewhere in this number, the error studies of Charters[19] in language, those of Counts[20] and Osburne[21] in arithmetic, the study of Miss Zirbes in reading[22] and Gray's suggestions for informal reading testing[23] are valuable because of their simplicity. They show what any teacher can find by making a study of the errors of her own class. They are probably as far as many teachers will get. They serve, nevertheless, to make the teacher observant of her objectives, her methods, and her results. To the advanced research worker such informal research may seem trivial, but we must remember that it is the classroom teacher after all who influences the children. This informal

[19] Charters, W. W. "Minimal essentials in elementary language and grammar." In *The Sixteenth Yearbook of the National Society for the Study of Education* (Part I). Bloomington, Illinois: The Public School Publishing Company, 1917. Pp. 85-110.

[20] Counts, George S. *Arithmetic tests and studies in the psychology of arithmetic.* Chicago: University of Chicago Press, 1917. 12 pp. (Supplementary Educational Monographs, V. 1, No. 1, August, 1917.)

[21] Osburne, W. J. Study of State Department of Public Instruction, Madison, Wisconsin. (Unpublished.)

[22] Zirbes, Laura. "Diagnostic measurement as a basis for procedure." *Elementary School Journal*, 18:505-22, March, 1918.

[23] Gray, William S. "Value of informal tests of reading accomplishment." *Journal of Educational Research*, 1:103-11, January, 1920.

research is frequently the forerunner of an abiding interest in more advanced research.

Courtis has probably succeeded better than anyone else in organizing research to affect the whole school system and in interesting large numbers of teachers in profitable research activities. Practically every department of the supervisory staff is engaged in some form of research work. Through city-wide surveys the staff secures data for the appraisal of its policies, plans, and methods. Teachers and supervisors set to work to determine the bases for changes.[24]

Administrative Research

Less attention has been given by research workers to large problems of administration than such problems deserve. State Superintendent Wood has very appropriately called attention to this in his address before the California Conference on Educational Research and Guidance.[25] Buckingham has pointed out that we are too much inclined to devote our energies to the minutiae of measurement while the decision in regard to grave issues is left to opinion and personal bias. Some have very little opportunity for research in the administrative field, but many of us seem to have assumed either that administrative problems are too difficult to permit any appreciable progress or that the facts will not be used when found. It smacks of the attitude of the small boy who feels that the water is too cold or that he does not need a bath. Superintendents and board members are anxious to know the relative merits of this, that, or the other system; how much each will cost to operate over a given period of years; or what the educational effect of each will be.

The facts are urgently needed as to the value of such matters as kindergartens, junior high schools, special classes of various kinds, small classes, departmental teaching, supervision,

[24] Smith, Thyra. *A report on the functions and labors of the Department of Instructional Research, Detroit.* (Unpublished.)

[25] Wood, Will C. "Adjustments in California." *Journal of Educational Research*, 6:326-31, November, 1922.

supervised study, teaching experience, and supplementary reading, to mention but a few.

When we have the necessary facts as to their achievements I dare say we shall see few such nefarious attempts as that of the present governor of California or of certain politicians in Pennsylvania and Wisconsin to curtail the activities of their respective State Departments of Education. At present we are unable to say with assurance how long the school day or the school year should be, or how many years there should be to the school course except as we are guided by tradition. Kansas City has openly defied the other schools of the country for years with its seven-grade elementary school and no one has succeeded in showing that the Kansas City children are any the worse for it. When finances are low, board members evolve various schemes for curtailing expenses without a scientific basis upon which to act.

General organization.—There are problems of general organization and control calling for attention. Demonstrable evidence is needed as to the relative efficiency of various forms of organization. Morrison and Frazier have both published important contributions in this field within the past year. Morrison's study of the legal status of the city superintendent shows how far certain movements have progressed, such as centralizing authority in the superintendent, the small board of education, and the election of board members at large, and suggests the desirability of unmistakable evidence of their superior merits. Frazier has suggested a technique for evaluating types of school control and has attempted to demonstrate the relative efficiency of cities having different methods of choosing board members and different degrees of fiscal independence with some degree of success. In spite of the tremendous handicaps which the research worker must face in the form of variable factors he has succeeded in showing a positive correlation between his criterion of efficiency on the one hand and election at large and fiscal independence on the other.

Financial studies.—If education is to be properly financed, more careful consideration must be given to such matters as ability to pay, possible sources and amounts of revenue, and methods of securing more equitable distribution of funds. Updegraff, Swift, and Strayer and his associates on the Educational Finance Inquiry are actively at work in this field. Out of these studies we hope that a more scientific control of school finances will develop.

A pressing problem for investigation in many communities right now is that of the future requirements of the salary schedule and the steps necessary to meet those requirements. If we may judge by the absence of published literature on the subject most boards of education have apparently adopted salary schedules without any research to determine the financial policies necessary to maintain them. If catastrophes are to be averted there must be some research looking to the future. Several smaller communities have already abandoned their high salary schedules because of the sudden awakening of the need—either real or fancied—of financial retrenchment. Is it not possible to avert such calamities by the application of research methods which in advance will point out the necessary policies? In business those firms which looked ahead are most successfully weathering the storm of industrial depression.

More and more we are coming to feel the need of accurate cost research. The hard-headed but sincere business man insists on knowing what the proposed program will cost not only for the current year but in succeeding years. He is anxious to know the probable relation between cost and improved results. He wants to know whether a certain type of service is being secured at a reasonable cost. Many a board member unwittingly obstructs the course of educational progress because we cannot furnish him the necessary data to show with reasonable accuracy the educational results that will accrue with a given expenditure.

Unfortunately, almost no comparable data are available regarding the cost of various types of education in different cities. This statement is made advisedly. No two large cities make

identical distribution of charges. We do not know the reliability of the figures used. Some progress, however, is being made toward uniformity in basic data through the new accounting system devised by the joint committee of the Department of Superintendents, the Inter-City Conference, The National Association of Public School Business Officials, and the Bureau of Education.

Buildings and equipment.—Many millions of dollars are expended annually for new school buildings and equipment but until recently scarcely a dollar was spent for research activities in this field. Consensus of judgment has been resorted to rather freely in the last six or eight years but little actual research has been conducted. What equipment is actually needed to operate a given program that shall not be wasteful in point of utility, space consumption, and cost? What is the most efficient size of school buildings and classrooms? What should be the dimensions of various parts of a building? What accommodations are necessary to care for a given number of high-school students on a certain program? What is the proper space allotment for various activities and what is the most economical arrangement? There is little doubt but that enormous sums are wasted annually through faulty designs and arrangements of buildings and equipment. In the absence of scientific data superintendents and board members are obliged to make decisions the effect of which will be felt for a quarter of a century or more.

Fortunately a number of research workers are active in this field. Packer has been rendering valuable service in the field of building construction. Anderson is leading the way in equipment research and it is to be hoped that the results of his endeavors may soon be available. Almack and Stevenson have both been at work on the most efficient size of class with the intelligence factor controlled. Considerable doubt has existed as to what size classes should be. Almack has attempted also to determine the most efficient size of a building necessary to maintain standard classes. As the result of a study made at Stanford University, he concludes that the school which is most efficient when results and cost are both considered "maintains classes of 40

pupils, groups at least 1,120 pupils in a school and is organized on the duplicate plan." [26]

Studies in class organization.—From Stevenson's [27] study it appears that the administrator is given a choice between smaller classes with less experienced teachers at lower salaries or larger classes with higher salaries and more experienced teachers. For, if the strong teacher can produce results with large classes that are only slightly lower than she can produce with smaller classes, she can probably produce better results with a large class than a less able teacher with fewer numbers.

The study of Kiebler and Woody [28] in which they compared the individual laboratory method and demonstration method of teaching physics is exceedingly suggestive of possible cost and time economics. If subsequent investigation supports their findings, it may point the way toward the possible elimination of the double laboratory period with its program difficulties. It will make it possible to purchase a much greater variety of laboratory equipment for the same amount of money.

Research in secondary education.—Studies in the field of secondary education should give us considerable cause for apprehension. Our legislators have been tightening attendance laws, and the demand for high-school education has been increasing rapidly. The secondary-school population is undoubtedly becoming increasingly heterogeneous while the average intelligence is probably decreasing. Selective factors have continued their slaughter of the innocent. Economic pressure and high-school standards too high for the pupil of only average intelligence are making a secondary-school training out of the question for large numbers of deserving boys and girls. Such contributions as that made by Counts [29] on the

[26] Almack, John U. A doctor's dissertation at Leland Stanford University.

[27] The complete report of this study will shortly appear as a Journal of Educational Research Monograph.

[28] Kiebler, E. W. and Woody, Clifford. "The individual laboratory versus the demonstration method of teaching physics." *Journal of Educational Research*, 7:50-58, January, 1923.

[29] Counts, Geo. S. *The selective character of American secondary education.* Chicago: University of Chicago Press, 1922. 57 pp. (Supplementary Educational Monographs, V. 1, No. 19, May, 1922.)

question of selection, when taken together with the studies of Proctor[30] indicating that pupils with an I. Q. of less than 90 seldom succeed in getting a high-school education, constitute a *stinging indictment* of our democratic professions of equality of opportunity. Fortunately or unfortunately, the many citizens whose sons and daughters are now as effectively denied a secondary-school training as if prohibited by law have not yet awakened to the fact.

The real question is whether these boys and girls who are now being eliminated through the operation of selective factors need more education and whether they are capable of further learning. Unless it can be demonstrated that further education is unnecessary or impossible for boys and girls who are now denied a high-school education, it becomes the plain duty of research workers to assist in bringing order out of this chaotic condition. The problem appears to be largely that of discovering the possibilities of adaptation. If, as seems to be true, the child with an I.Q. of 110 does only average work, our materials of instruction are keyed considerably too high. There is urgent need for critical examination and evaluation of curricula, courses of study, methods of teaching and organization on the one hand and the perfection of means and methods of diagnosing pupils' particular limitations and predicting their probable necessary failure on the other.

College enrollments.—If we are to avoid an unpleasant situation there must be some very careful prediction studies of the probable enrollments in high schools and colleges in the next few years. It is doubtful if many college administrators, much less legislators, realize what is coming as a result of the enormous increases in high-school enrollments in the last few years. We are sending boys and girls on and will be sending them on—to what? What is to become of them? Many colleges and universities are now crowded to their doors. Legislatures should now be providing the funds to meet the wave which is coming. Col-

[30] Proctor, W. M. "Psychological tests as a means of measuring the probable school success of high-school students." *Journal of Educational Research*, 1:258-70, April, 1920.

leges should be mapping out courses and preparing for the necessary faculty expansion. But who knows how many are coming; just when they will arrive; what courses they are going to take; and what it will cost? There should be an analysis of the controlling factors so that prediction may be made with a reasonable degree of accuracy.

Conclusions

The chief service of contributions in the field of educational research up to the present time has undoubtedly been in pointing out problems and methods of approach. We are not yet ready to accept the conclusions of research studies as final. We are not always satisfied that the answer found is correct. Very few, if any, lines of investigation have been carried to their logical conclusion. Nevertheless we are finding how to arrive at the truth. What has been done thus far has stimulated the educational world to the point of doing some real thinking as to whither it is bound and how it is to make the point proposed.

MEASUREMENT OF A NEW PHASE OF READING[1]

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The present paper is an attempt to describe a reading scale based upon ability to pick out the central thought of a paragraph. The development of this scale is the outgrowth of a slowly maturing conviction that the best way to guarantee the teaching of a particular aspect of a subject is to construct a test which purports to measure that aspect of the subject.

The evidence which points to the need for emphasizing in our teaching the picking out of central thoughts from paragraphs demands little discussion. A few years ago the writer, while teaching a freshman course called "How to Study," found that the students could not make marginal headings setting forth the central thoughts in the paragraphs of their every day assignments. The prevailing tendency among them was to select a sentence or portion of a sentence which contained an appealing idea, without regard to its setting or to the purpose of the paragraph. Germane[2] and Jordan[3] in their experiments found this same inability to pick out central thoughts and this same tendency for indiscriminate selection of ideas.

Critical examination of existing reading tests reveals the need of a test emphasizing the ability to pick out central thoughts. Some of our reading tests not only do not emphasize this ability, but they actually tend to hinder its development. Those tests which ask children to reproduce a selection and those in which a great number of questions are asked without reference to their importance, do not raise the question of relative worth or value of statements. Such tests probably tend to develop what

[1] Paper presented at the Cleveland meeting of the Educational Research Association, February, 1923.

[2] Germane, C. E. "Outlining and summarizing compared with re-reading as a method of study." *Twentieth Yearbook of the National Society for the Study of Education.* Part II, p. 103-13.

[3] Jordan, R. H. "A three-fold experiment in high-school English." *English Journal,* 10:560-69, December, 1921.

Professor Miller of the University of Wisconsin calls "mirror minds." On the other hand, a test in which the questions can be answered only after the children have read the paragraph and selected the particular elements bearing on the question, or a test in which the exercises require that the main idea of the whole paragraph be mastered before the answer can be ascertained raises to a greater or less extent the question of the worth or value of statements and stresses somewhat the inner relationship of sentences. These tests undoubtedly measure a higher order of reading ability than the ones previously mentioned, but they do not generate a consciousness on the part of the pupils that they must weigh and evaluate the contents of what they have read.

It is to develop consciously the attitude of judging the worth of statements, of seeing the inner relationship between phrases, clauses, and sentences that this new test has been constructed. It is thus clearly seen that this test is a propaganda device for causing teachers to direct some attention to this important phase of the teaching of reading.

Description of the New Test

This test of the ability of students to pick out the main idea of a paragraph is tentatively published in two forms of equal difficulty. Each form consists of nine paragraphs of from three to eleven lines each. These paragraphs were selected from subject matter usually read by children in the elementary school. This type of subject matter was used in order that the test might approximate schoolroom conditions and be equally fair to all children. Furthermore, it was felt that the test would be a greater force for the improvement of instruction if it applied to the subject matter actually taught.

The paragraphs are graduated in difficulty and range from the easiest to the hardest ones found in elementary-school subject matter. Under each paragraph are five statements, each containing a thought or a portion of a thought mentioned in the paragraph. Almost without exception the statements agree with the facts as given in the paragraph, although at times they do

not contain the exact wording. The one or two exceptions in which the statements are at variance with the paragraphs occur simply because the paragraphs concerned were short and it seemed impossible to formulate five statements in keeping with them.

In passing it may be said that selecting appropriate paragraphs and statements proved to be no easy matter. In the upper grades where the subject matter is more extensive and is expressed in rather complete and well-rounded paragraphs, there was little difficulty. In the lower grades, however, where the paragraphs to which the pupils are accustomed are very short and consist of piece-meal thoughts expressed in more or less isolated and choppy sentences, it was almost impossible to find a paragraph containing a central idea, to say nothing of enough other ideas to serve as a basis for making five simple statements. In both the upper and lower grades there was considerable difficulty in making five clear-cut, unambiguous statements closely enough related to compel a weighing of their comparative worths and yet not so closely related that it was impossible to determine the one which expressed the central thought.

In order to present the test more adequately the teacher's general directions, most of which are given on the first page of the test, and three sample paragraphs from Form 2 will be quoted. The directions are as follows:

> On the following pages are some short paragraphs. After each one you will find five statements. Each statement tells something about the paragraph. You are to pick out the statement that you think best expresses the central thought of the paragraph.
>
> Here is a paragraph for practice. Read it very carefully and then read the statements that follow. Put a circle around the number before the statement that you think best expresses the central thought of the paragraph. Take time to think. You will have plenty of time, do not hurry.
>
> The examiner says: "Now let us read the exercise."
>
> "A farmer once caught a bird in a net. The bird begged the farmer to let him go free, promising that he would lead many other birds to the net. But the farmer said, "Now that I know the kind of a bird you are, you shall surely die. No death is too bad for him who is ready to betray his friends."

The examiner says: "Now let us read the five statements."

1. The bird asked the farmer to let him go free.
2. The bird promised to lead many other birds to the net.
3. The bird learned that it is wrong to betray friends.
4. The bird was told that he must die.
5. The bird was caught in the net and could not get free.

The examiner says: "Which of these five statements best tells the main thought in the paragraph?" and allows two or three children to suggest. Then he says, "Statement number three is the correct one, so take your pencils and put a circle around the figure 3." (Illustrate.)

The examiner makes sure that children place the circle as directed and then reads: "On the next page you will find some more paragraphs similar to the one you have just finished. You are to read these carefully and under each paragraph draw a circle around the number of the statement which you think best expresses the central thought. Be sure to put a circle around only one statement under each paragraph. *Ready—Start.*" Time, *Not More Than Ten Minutes.* The children may finish before the end of that time; but in any event, take up the papers. Put the tests in properly labeled envelopes.

Exercise I

(The first in the test)

Frank tried to draw a picture of the rooster, but he soon got tired of that, and tried to draw the cat, asleep in the arm chair. That pleased him no better. The fact was, Frank wanted to be out of doors.

1. Frank tried to draw a picture of the cat.
2. Frank tried to draw a picture of the rooster.
3. Frank saw the cat asleep in the chair.
4. Frank was not pleased with his drawings.
5. Frank was tired of staying in the house.

Exercise II

(The fifth in the test)

Rip's story was soon told, for the whole twenty years had been to him as one night. The neighbors stared when they heard it; some were seen to wink and put their tongues in their cheeks; and the self-important man in the cocked hat, who when the alarm was over had returned to the field, screwed down the corners of his mouth and shook his head—upon which there was a general shaking of heads throughout the whole assemblage.

1. The people of the village doubted Rip's story.
2. The people of the village stared and winked at each other.
3. The people of the village shook their heads at Rip Van Winkle.
4. The people of the village put their tongues in their cheeks.
5. The people did not like Rip's appearance.

Exercise III

(The ninth in the test)

You, the boys and girls of America, must create a new standard of values for your generation. For a century, men the world over, but especially here in the United States, have bowed to material success as the greatest god they know. We have exalted the men with money as we have exalted no other type in American life. Now we must learn that success consists not in what we have but in what we are, not in what we hold in our hands but in what we hold in our heads and hearts, not in our skill to buy low and sell high, but in our ability to dream, to build, to battle, to kindle, to serve Young America. It must be your business in these years to raise this new standard before the eyes of your fellow citizens, your aim to give them a new ideal of what constitutes success.

1. The hope of America lies in the power of her people to gain wealth.
2. The hope of America lies in the knowledge gained by her youth.
3. The hope of America lies in the power of her youth to maintain high ideals of success.
4. The hope of America lies in the progress of the people as shown by their skill in making great buildings.
5. The hope of America lies in the dreams of success on the part of her boys and girls.

The Development of the Test

The present tests passed through at least three preliminary stages. The first consisted of submitting the paragraphs and the accompanying statements to several teachers to determine whether there was any agreement as to the statements which contained the central thoughts. On the basis of their judgments, modifications in several of the statements were made. The second stage consisted of submitting the exercises, arranged in a supposed order of difficulty, to some 900 children in grades IV to IX, inclusive. The results thus obtained showed clearly that on some exercises the children did not make as fine discriminations in picking out the central thoughts as the teachers had and that modifications were needed to make the statement containing the central thought stand out more vividly. These results also revealed the fact that the supposed order of difficulty was far from the correct order. Furthermore, they showed that most of the exercises were too difficult for the children below

grade v and that easier ones should be added. The third stage consisted of making the alterations suggested in the second stage and submitting the exercises to about 1,500 more children in grades IV to VIII, inclusive. These results indicated that in successive grades a greater and greater percent of children selected correctly the statements containing the central thoughts. Since this was true and since there was almost universal agreement on the statements selected by 300 juniors and seniors at the University of Michigan it was decided that no more alterations in the statements themselves were necessary. The attempt, however, to select easier paragraphs had met with little success, and this led to the conviction that it was useless to attempt such a test lower than the fourth grade.

Consequently, on the basis of results from the third stage of the development of the test, the exercises were scaled after the familiar method used by Thorndike, Buckingham, Trabue, Henmon, and others. From these scaled exercises two forms of the test, statistically equal in difficulty, were constructed. Whether they are equal in difficulty in actual practice is a problem upon which work is now being done.

Results of the Test

Table I gives a summary of the number of exercises on Form I correctly marked by 1,245 children somewhat evenly distributed throughout grades IV to VIII, inclusive. Out of the nine exercises in the test, the median number correctly marked in grade IV was 2.6; in grade V, 3.0; in grade VI, 3.9; in grade VII, 4.4; in grade VIII, 5.3. These medians show that the ability of the pupils to pick out the central thought was not well developed, for even in the eighth grade the median score indicated that but slightly more than half of the exercises were correctly marked. In this same grade out of 175 pupils taking the test, two failed to mark a single exercise correctly, and seven marked only one exercise correctly. On the other hand, seven pupils marked all but one of the exercises correctly, and one pupil correctly marked them all. The relatively large number of eighth-

TABLE I. DISTRIBUTION OF SCORES ON THE WOODY SILENT-READING TEST, FORM I

Number Exercises Read	Grades				
	IV	V	VI	VII	VIII
0	34	21	14	5	2
1	59	53	22	16	7
2	87	70	39	36	9
3	58	60	50	49	19
4	35	43	48	42	42
5	14	19	34	43	33
6	5	15	20	34	37
7	2	3	11	9	18
8	1	1	4	10	7
9	.....	.....	1	3	1
Medians	2.6	3.0	3.9	4.4	5.3
Number tested	295	285	243	247	175

grade pupils who make low scores and the relatively small number who make high scores on these paragraphs, many of which have been selected from the reading materials of the lower grades, ought to present a challenge to the teachers of this grade. The distribution of the scores in the lower grades is somewhat similar to that in the eighth grade save that the lower the grade the greater the number of pupils making low scores and the fewer the number making high scores. It is plainly evident that the ability to pick out the central thought increases throughout the grades, but that the amount of increase is small.

The Reliability of the Test

In order to throw some light on the reliability of the test, the children in one school were given both forms of the test, i.e., the test before differentiation into two forms, on different days of the same week. The teachers were instructed not to discuss the exercises with the pupils until after the second test had been given, but in about half of the rooms these instructions were not followed.

The second test shows quite a variety of results. In the uninstructed sections of the fourth grade the students actually did worse on the second than on the first test. No reason for this

could be ascertained unless it was that the children resorted to guessing and had been more lucky in the first test. In the uninstructed sections of the fifth and sixth grades the pupils scored

TABLE II. COMBINED RESULTS OF FORMS I AND II ON FIRST AND SECOND TRIALS ON WOODY SILENT-READING TEST

	Grades										
	IV-B	IV-A	IV-A*	V-B	V-B*	V-A	VI-B	VI-A*	VII-B*	VII-A*	VIII-B*
First Test....	6.5	6.3	5.8	6.1	6.0	7.1	8.2	9.2	10.8	9.6	12.9
Second Test...	5.6	4.9	7.2	6.8	7.5	8.1	9.3	14.4	14.5	12.4	14.8
Pupils Tested.	27	19	19	19	16	31	13	21	11	27	27

*Sections were "coached sections."

about one exercise more on the second than on the first test. This amount of improvement is probably due to learning from the experience of the first test. In the sections in which the teachers discussed the proper answers to the exercises after the first test, the amount of improvement shown on the second test varied from 1.4 exercises in IV-A to 5.2 exercises in VI-A. These gains represent the temporary effects of coaching and while in all probability they will not be retained *in toto*, they suggest that emphasis on picking out central thoughts in teaching would result in improvement.

The coefficients of correlation and the coefficients of reliability (shown in Table III) between two successive trials of the test in the school mentioned above indicate that the test possesses a fairly high degree of reliability in all grades above the

TABLE III. COEFFICIENTS OF CORRELATION AND OF RELIABILITY ON TWO SUCCESSIVE TRIALS OF THE WOODY SILENT-READING TEST (FORMS I AND II COMBINED)

Coefficients of	Grades										
	IV-B	IV-A	IV-A*	V-B	V-B*	V-A	VI-B	VI-A*	VII-B*	VII-A*	VIII-B*
Correlation...	.39	.27	.29	.77	.47	.74	.82	.68	.62	.66	.87
Reliability....	.56	.54	.45	.87	.64	.85	.90	.81	.77	.79	.93
Pupils Tested.	27	19	19	19	16	31	13	21	11	27	27

fourth. The coefficient of reliability for two trials is obtained by the formula $\frac{2r}{1+r}$. It "measures the extent to which the amalgamated results of two trials of a single test would correlate with a similar amalgamated series of results from two other trials with the same test." [4]

It is very interesting to note that both the coefficients of correlation and coefficients of reliability are higher in those sections in which there was no discussion of the exercises between the taking of the two tests. It has been shown previously that the sections in which the exercises were discussed made considerably higher scores on the second test, but these coefficients indicate that the coaching had little influence on the relative positions attained by the different pupils. As mentioned above, its greatest influence was in the fourth grade where *guessing* in the first test may have been pitted against *memory* in the second test.

Validation of the Test

The validation of the test in its present form is an unfinished task, but the results of three minor attempts will be presented. The first two attempts were made when the test was in its second stage of development, i.e., before the paragraphs were arranged according to difficulty, before the effort to add easier paragraphs was made, and before the paragraphs were differentiated into two forms of equal difficulty.

Table IV, exhibiting the first attempt at validation, shows that the average of the coefficients of correlation with the National Intelligence Test is 0.45; with the comprehension score of the Monroe Silent-Reading Test (revised edition), 0.49; with the teacher's estimate of general reading ability, 0.72. Two interesting facts are manifest in this table. (1) The correlation of this test with the National Intelligence Test and with the comprehension score on the Monroe Silent-Reading Test is approximately the same. (2) The correlation of this test with the

[4] Brown, William, *The essentials of mental measurement*. London: Cambridge University Press, 1911. Pp. 101-2.

TABLE IV. CORRELATION WITH THE NATIONAL INTELLIGENCE TEST, THE MONROE SILENT-READING TEST (COMPREHENSION), AND TEACHER'S ESTIMATES OF READING ABILITY

Correlation with—	Grade					Average
	IV	V	VI	VII	VIII	
National Intelligence Test	.44	.44	.45	.45	.46	.45
Monroe Silent Reading (comprehension).....	.40	.53	.53	.50	.50	.49
Teacher's Estimates of Reading Ability.....	.60	.70	.73	.75	.82	.72
Number of Pupils.....	70	72	88	95	92	

teacher's estimate of the pupil's reading ability is higher than with either of the other tests.

In the second attempt at validation the coefficients of correlation of this test with the National Intelligence Test and with the Monroe Silent-Reading Test, shown in Table V, are more variable than those shown in Table IV, although the averages of the coefficients are about the same. Whether this variability is due to chance, or to the different emphases in instruction, or to the fact that different teachers gave and scored the tests in the second attempt while one specially trained person gave and scored all of the tests in the first attempt, is not known. The coefficients of correlation with the comprehension scores on the

TABLE V. CORRELATION WITH THE NATIONAL INTELLIGENCE TEST AND THE MONROE SILENT-READING TEST (RATE AND COMPREHENSION)

Correlation with—	Grade					Average
	IV	V	VI	VII	VIII	
National Intelligence Test	.26	.58	.32	.31	.70	.43
Monroe Silent Reading Rate.....	.22	.49	.21	.40	.20	.31
Comprehension.....	.37	.51	.30	.41	.41	.40
Number of Pupils.....	65	66	34	38	27	

Monroe Silent-Reading Test are usually considerably higher than the coefficients with the rate scores.

The last attempt at validation was based upon the latest stage in the development of the test, the stage in which easy paragraphs have been added, in which the paragraphs are arranged according to difficulty, and in which they are differentiated into two forms. The results presented in Table VI are based upon such small numbers of children that the figures are probably of little significance. With Form I of the test, the correlations with

TABLE VI. CORRELATION OF THE WOODY SILENT-READING TEST WITH OTHER READING TESTS

Reading Test	With Form I			With Form II		
	Grade IV	Grade V	Grade VI	Grade IV	Grade V	Grade VI
Thorndike-McCall (T-score)	.51	.36	.63	.06	.65	.56
Monroe Silent Reading (Rate)	...	.33	.30	...	.23	.14
Monroe Silent Reading (Comprehension)	.74	.58	.50	.33	.38	.25
Burgess Silent Reading	.47	.45	.47	.31	.24	.37
Number of Pupils	17	19	24	17	19	24

"T-Scores" on the Thorndike-McCall Reading Test, with the comprehension score on the Monroe Silent-Reading Test and with the number of paragraphs read on the Burgess Silent-Reading Test are fairly high; but with Form II the coefficients are considerably lower. One exception exists in case of relationship with the Thorndike-McCall test in grade v in which the coefficient with Form I is 0.36 and with Form II, 0.65. The lower coefficients of correlation with Form II are probably due to the fact that Form II, even though statistically equal to Form I on the basis of test results of almost two thousand pupils, proved to be the more difficult of the two forms. This fact probably made guessing a more prominent factor with the second test. The fact that this test correlates much higher with the comprehension scores than with the rate scores on the Monroe Silent-Reading Test is added evidence that guessing lowers the coefficients. The lower coefficients with Form II cannot be due

to the influence of learning acquired from the taking of the test itself for in each grade the influence was neutralized by having one child take Form I and the next Form II in the first testing and by reversing the order in the next testing. Speculation, however, based on the figures given in Table VI is probably idle, because the number of pupils represented is very small.

In general, these coefficients of correlation indicate that there is some tendency for those who make high or low scores on the other reading tests to have related success in picking out the principal thoughts from these exercises; but there are many exceptions, especially when the exercises are more difficult. The writer is encouraged by the amount of correlation obtained and would not condemn the test if the amount were even smaller. To him the existence of little or no correlation between the ability to pick out central thoughts and the ability to do well on the other reading tests means simply that teachers have not been stressing the former aspect of reading as effectively as they have other aspects, and that existing reading tests do not measure this phase of reading ability. It is the writer's contention that the nature of products stressed in our measuring instruments gives direction to teaching and that teaching, or practice, influences the size of the correlations. In keeping with these contentions this test is submitted without hesitation and with the hope that it may have some influence in causing instruction in reading to center on relative values and the worth of statements.

CHILDREN'S EMPTY AND ERRONEOUS CONCEPTS OF THE COMMONPLACE

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AND
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Peggoty of *David Copperfield* thought hides a kind of tropical fruit. Do children and adults have similarly erroneous notions? Plenty of "Peggotys," are to be found perhaps among every class of pupils, in respect to many a concept which is usually taken for granted. Undoubtedly, too, there are some school-teacher "Peggotys." Almost any adult can testify to his chagrin at finding suddenly that he has long been thinking of this or that with a meaning entirely wrong. Although we may be shocked to hear a high-school graduate use "Irish home brew" when he is really talking of "home rule," almost any one may suffer such confusions long before he is aware of them. We usually take much for granted, so do our friends and associates. But unless we get a few surprises we go on with our assumptions.

Do facts warrant us in taking so much for granted? Do they warrant those who hear our speech and read our writing in assuming that we know whereof we speak and write?

One of the authors, while teaching history to a class of sixty rural teachers having from four to ten years' teaching experience, found during an oral class exercise that some of them were thinking of the United States foreign minister to Japan as a Presbyterian clergyman, some as a Methodist, some as a Catholic priest, and so on, in accordance with their apparent prejudices. Practically all these teachers, however, had demonstrated their familiarity with certain verbal statements such as appear in history tests. Of course, they were influenced by the force of verbal suggestion. This incident led to an investigation of the interpretations given to common terms in history and geography by younger pupils. A list of twenty tasks in

history was given to a group of 173 pupils from grades V, VI, VII, and VIII in a large city. Two samples from the set of history problems are given. The children were asked to fill in the blanks:[1]

1. Columbus was an explorer.
   An explorer is.....
2. The colonies carried on commerce with their mother country.
   Commerce is.....

Curious answers were obtained from the papers of these pupils. Of a group of 34 seventh-grade pupils, 19 thought that Benjamin Franklin, since he was the United States foreign minister in Washington's administration, was a clergyman. One child thought an "explorer is one who looks for a position," another that "an explorer is a wonder"—he probably meant "wanderer."

Further examples of incorrect or vague historical concepts held by these children follow:

1. *Civilization*—a new class of people, not wild people, an education (2), not educated, a country where the people govern themselves (2), the way one lives (3), a colony united.
2. *Colonists*—a band of people (2), slaves and convicts (2), civilized (2), English (2), Massachusetts Bay Colony, little countries.
3. *Charter*—a rule of law, a person who holds a chart, a paper that laws are kept on (3), granted, a sheepskin parchment written by a king.
4. *Commerce*—to ship, traveling on water, manufacturing, goods.
5. *Cabinet*—White House (4), office and home (3), place where representatives meet, congress, senate, house of representatives, the whole nation, a man, his secretary (2).
6. *Smuggling*—stealing, to sneak, fighting, drinking whisky, stealing furs and kidnapping everybody, a person who smuggles beers and alcohol, to capture, to tie up business, country, when any one tries to take away from any one.

The figures in parentheses indicate frequency. For example, we find under "Colonists" two answering that colonists were slaves and convicts; two, that colonists were civilized people; and two, that colonists were English people. Of the thirty-four children, therefore, ten made such incorrect answers as are indicated.

[1] Reported in part by Doctor Myers before the Psychological and Educational Sections of the American Association for the Advancement of Science at their meeting in Toronto, December, 1921.

The two following problems are representative of the geography set:

1. Massachusetts has many textile factories.
   A textile factory is.....
2. New Hampshire produces more granite than any other state.
   Granite is.....

Some of the incorrect or vague geographical concepts entertained by 150 fifth-grade pupils were:

1. *Textile factory*—flour, shoes, Massachusetts, soap factory, small factory, large factory (3), that makes candles, that makes things (2), where they have tools (3), carpenter's factory, iron ore, iron factory, busy factory, brick and tile factory, flower factory, product factory, good factory, wheat factory, manufactories.

2. *Granite*—growing in New Hampshire, flour, wheat, corn and wheat, grain, food, kinds of grain (5), marble, coke and coal, coal products (3), cement, fuel, lumber (2), lumbering places, made of dirt, many sorts of fruit, fruit, people, stock.

3. *Metal*—button (3), a badge (4), they have in France, an honor given to a man, something you win and wear (2), like men wear, war metal, soldiers, raised in Colorado, mouth-horn, something you can be good in, an honored state, valuable present, where good foods are, meat and sugar, places, different kinds of things (2), something some one uses, from certain things they keep long, melting.

4. *Stock raising*—flax, Montana, poor trees, holding it, commerce, different products, linen, silk, corn and other vegetables, food, wheat, growing stuff, Texas and Montana, raising many things (2) where they sell many things, packed and not loose, lot of the same kind, like a wholesale, a place where you go to see if you win something.

5. *Cereals*—fruit, canned fruit, Illinois, vegetables (4), from vegetables, coffee, all kinds of material, men who are higher than others, candy, crackers, important things, jelly, cocoanut.

It is of interest to know what percent of all the children tested gave evidence of reasonably correct concepts of the historical and geographical terms on which they were tested. The percents for a few of the terms are given in Tables I and II.

The standard of correctness was as nearly similar as possible to that of Terman in his vocabulary test. Whatever errors in rating were made, were likely to be in the direction of leniency. Accepting, however, this liberal evaluation of the children's notions of these commonly used terms, even then we find the figures are very significant.

TABLE I. PERCENT OF HISTORY DEFINITIONS CONSIDERED REASONABLY CORRECT

	Grades				All Grades
	V	VI	VII	VIII	
Colonists	24	35	39	79	52
Taxation	29	38	26	49	38
Minister	5	4	13	48	24
President's Cabinet	28	48	53	72	57
Constitution	10	11	35	85	48
Citizen	30	60	60	69	60
Number of Children	21	33	49	70	173

TABLE II. PERCENT OF GEOGRAPHY DEFINITIONS OF A SAMPLE LIST CONSIDERED REASONABLY CORRECT

	Grades			All Grades
	IV	V	VI	
Granite	31	47	71	51
Commerce	17	30	70	40
Hides	50	61	81	65
Dairy Products	65	74	89	77
Cereals	54	63	71	64
Population	23	47	87	55
Number of Pupils	46	150	82	278

It looks as if children have woefully vague and incorrect notions of terms which they use rather glibly in their routine school work. As we should expect, the correctness of concepts increases with the higher grades.

Very similar results have been found by Mary Starkey, Mabel Sipe, and Gertrude Wiley, students of the senior writer. Miss Starkey found, in addition to types of errors like the above, that the best ability groups, as determined by an intelligence test, have appreciably superior concepts of the commonplace terms here considered.

A Later Study of History Concepts

There are certain obvious defects in the first study. One cannot be certain that the general statement, "Columbus was an explorer," was read by the child before the next sentence: "An

explorer is"..... was completed. We are interested to know the degree of unfamiliarity with such terms of geography and history. It is of still greater significance, however, to know how many pupils in a routine manner can make correct statements, and still not have a reasonably correct notion of the leading terms. In other words, it is of great interest to know to what degree children answer questions correctly and make correct statements of facts, without knowing what they have answered. From another point of view, are we justified in assuming that a pupil's correct answers are prototypes of correct notions?

The second study applied only to historical terms. Here are the questions which were given:

1. Name two explorers.
2. Name one man who signed the Declaration of Independence.
3. When was the Constitution of the United States adopted?
4. Name some one who was on President Washington's cabinet.
5. Name two nations.

1. What is an explorer?
2. What was the Declaration of Independence?
3. What is the Constitution of the United States?
4. What is a president's cabinet?
5. What is a nation?

The page was folded so as to hide the lower half while the upper half of the questions was being used. Afterwards the lower five questions were answered. The obvious aim was to discover how many of those who could answer the first one correctly at the top could also answer the first one correctly at the bottom, and so on for each pair. Table III shows the results.

What is of most interest here is the percent of children who name an historical example or event without being able to give a reasonably correct notion of what they were naming or illustrating. Forty-one percent of the children could name two explorers but were not able to tell what an explorer was. For the fifth, sixth, seventh, eighth, eleventh, and twelfth grades respectively the proportions were 46, 33, 46, 42, 35, and 12 percent. Twenty-nine percent of all the children could name a man who signed the Declaration of Independence but could not give

TABLE III. PERCENT OF PUPILS WHO GAVE CORRECT EXAMPLES BUT FAILED TO GIVE THE CORRECT DEFINITIONS

	Grades						All Grades
	V	VI	VII	VIII	XI	XII	
Name two *explorers*	46	33	46	42	35	12	41
Name one man who signed *the Declaration of Independence*	14	16	43	33	8	8	29
When was the *Constitution of the United States adopted?*	34	25	31	22	0	0	24
Name some one who was in President Washington's *cabinet?*	5	8	10	13	0	0	9
Name two *nations*	47	38	34	26	4	4	31
Number of Pupils	58	69	171	125	26	26	475

a reasonably correct idea of the document. Twenty-four percent knew when the Constitution was adopted without being able to tell what it was. Nine percent could name a member of President Washington's cabinet but could not give a reasonably correct definition of a president's cabinet. Finally, 31 percent could name two nations but could not state with reasonable correctness what a nation is. Some of the incorrect answers are given. The numbers in parentheses indicate the frequency of the reply.

What is an explorer?

One who explores. (88)
One who discovers something. (59)
When a party of men look at land. (11)
One who gets land for his country and names it after his king. (15)
One who sees something of the world. (5)
One who surveys land. (4)
When men and women go out and settle down. (3)
One who goes to the North Pole. (3)
A man like Columbus. (2)
One that sets land out. (2)
One that invents another place. (1)
A great man. (1)
One who looks for different rivers and cities. (1)
One who travels to see where land is best so you can raise vegetables. (1)
Miscellaneous. (8)

What was the Declaration of Independence?

To make peace. (54)
Things King George did, why we should be free. (26)
When you sign a paper. (17)
England signed a treaty with the United States. (13)
When a country has freedom. (13)
The peace of the Civil War, or freeing the slave. (11)
Our Constitution. (6)
To declare independence. (5)
A set of laws declaring freedom. (4)
Signing of Independence. (3)
Treaty with New England. (3)
That anyone could trust the person who signed. (2)
When people did not have to pay any more taxes. (1)
A holiday when something has been signed. (1)
Miscellaneous. (11)

Only about one-eighth of the fifth grade repeated the word they were defining in their definitions as, "an explorer is one who explores"; while about one-quarter of the sixth and of the eighth grades and a third of the seventh grade used this form of expression.

Practical Application to the Schoolroom

A simple test like this could be made up and applied by any teacher in practically any school subject. A teacher who will try such a test or one like the first test will get valuable information which will inevitably suggest to him that he has been taking too much for granted with his pupils. Incidentally, such a study will suggest to him a critical checking up on his own notions of many things he has used with little or no reflection. From such a study of his pupils the teacher will undoubtedly get the suggestion that he should constantly challenge their concepts of many terms involved in routine class statements. He will also discover that children in attempting to express their notions, have language difficulties in which the whole *modus operandi* of thought and expression is involved.

Do We Need a Socrates Today?

Perhaps we are very much in need of a Socrates to challenge us at every turn of our expression, to make us speak and write

reflectively. By parrot mastery of a considerable number of phrases and sentences we can with very little wisdom speak and write what seems to be wise. When we run short of ideas we use words as substitutes By a little familiarity with a half score of leading terms and phrases of a particular field or profession we can suggest to the specialist in that field, by manipulation of these words and phrases in his presence, that we have considerable acquaintance with his specialty, when, as a matter of fact, we may be grossly ignorant of it. How oft repeated are such terms in educational literature and pedagogical speeches as *project, socialized recitation, motivation, apperceptive basis,* and the *inductive method.* Such terms may pass muster even with the specialist; yet they may merely be the empty manipulation of words.

One may conclude that children have very vague and incorrect notions of some of the terms frequently used by them in their routine procedure. Apparently the child by routine word mechanics can, without knowing very much, seem to know a great deal; he may make a "perfect" recitation without knowing what he is reciting about. *A "correct" answer is no proof that the child knows what he has answered.*

The high-school and college lad can write class papers that read pretty well. Suppose he had to answer them in simple language of his own so that his ten-year-old sister could understand it; or had to explain a dozen of the leading terms and phrases. As temporary good fortune to him, he is pretty safe from such a test.

Thanks to our silent-reading tests and the emphasis they have stimulated, pupils are generally learning to be interested to a greater degree in meanings rather than in empty words. But in the light of the studies reported above, it is even possible to obtain a high score on some silent reading exercises by mere manipulation of words which, to the answerer, are vague or empty. Is much of school learning still only word manipulation? If so, what are we going to do about it?

A SELF-RATING SCORE CARD FOR SECONDARY-SCHOOL PRINCIPALS

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The problem stated.—Secondary-school principals, as I know them, are deeply sensitive to the responsibilities implied in the positions of public trust which they hold. They earnestly desire to direct the work of both teachers and pupils so that the pupils may profit to the full by the school's offerings. Among the aims which they set for the pupils are a command of subject matter, character development, productive capacity, and citizenship habits of a high order.

They are men earnest in their work, anxious to administer their schools so as to enrich the lives of the pupils enrolled therein and eager to raise to a high level the social standards of their communities. In this attempt, secondary-school principals have sought to match their efforts against the opportunities and obligations included in a none too clearly defined task. Many young men now teaching look forward to the time when they may assume the responsibilities of a secondary-school principalship. Young men now in college are considering the choice of professions and not a few are weighing them with regard to the preparation required and the opportunities offered for giving highly specialized service. For the direction of principals and the guidance of future principals answers are needed to the question, "What is a high-school principalship?"

When the work of the secondary-school principal is clearly defined in the minds of laymen, and not until then, will school boards change from the all too common practice of releasing an efficient principal and advancing a teacher to the principal's position in order to effect a saving of a few hundred dollars. In the administration of certain civic affairs the stage has been reached where we demand that trained men shall be appointed to posi-

[1] In collaboration with a group of graduate students of the University of California.

tions which involve the handling of agencies of human welfare; the doctor, the lawyer, and the city engineer must have highly specialized preparations for their several callings. The high-school teacher, too, must now show special preparation for his task, yet the profession of principalship, that of directing the work of both teachers and pupils, has not as yet in the layman's mind been recognized as a calling which demands a high degree of specialization—a degree of preparation on a par with that demanded in a city physician, a city engineer, or a city manager.

An instance just now comes to my mind of a young college graduate with no teaching experience who called upon a city superintendent to inquire how he might successfully carry on the work of a high-school principal—a position to which he had recently been appointed. Although he was apparently eager to know the technique of his new work, he of course could not fully appreciate his lack of preparation. Educational and vocational guidance must necessarily be provided for this important calling. To anyone who thinks clearly on the matter, it is evident that guidance does not consist in the presentation of a set of ready-made specifics which are guaranteed to work, but rather consists in pointing out the relative importance of the several activities in the particular job in question.

Students of vocational education are coming to the conviction that vocational guidance of a scientific character is out of the question until intelligence levels for the several occupations have been established and until for each occupation an intensive and thorough-going analysis has been made. Secondary-school principalship as a profession is on a par with the ministry or law in opportunities for public service; and for these professions a definite professional training, often combined with a full college course, is required. To pursue a college course successfully and to complete it with honors may be safely accepted as evidence of high-grade abstract and social intelligence. Graduation from a standard college may be accepted as evidence of the needed intelligence. The job analysis of the business of secondary-school principalship is, however, as yet only imper-

fectly made. Certain elements essential to real success in principalship work are here listed under the general heads: I. *Personal Equipment;* II. *Business Management;* III. *Supervision of the Teaching Staff;* IV. *Social Adaptation of the Curriculum;* V. *Student Relations;* and VI. *Community Relations.*

A beginning in any job analysis includes listing the several activities in which individuals pursuing that job actually participate, listing the tools utilized, and showing the skill necessary to handle the tools. This much and more has been attempted in the items listed in the score card for secondary-school principals which is given here.

Making the score card.—During the 1922 summer session of the University of California there were enrolled in the writer's course for high-school principals some seventy men and women from several states, many of whom had worked for years in high-school principalships. The remainder of the group were experienced teachers who looked forward in the near future to positions in secondary schools where executive responsibilities would be assumed.

This group of interested school men and women under the direction of the writer listed the several lines of activity in which secondary-school principals do engage and should engage. They analyzed the institution which the principals must manipulate and keep going, and the items of preparation and skill which should be possessed by the efficient and successful secondary-school principal. These listings, as made by the members of the group, were collected, collated, and organized by a committee of the class in conference with the writer.[2] A single list of items was then made, which in the judgment of the committee represented the most significant items from among those suggested by the members of the class.[3] This list was duplicated and a copy again given to each member of the class with instructions to strike out insignificant items and to insert items worthy of men-

[2] The committee on correlation of class suggestions consisted of L. E. Adams, W. S. Brown, J. A. Dopp, R. J. Moulton, and H. S. Tuttle.

[3] The committee gained numerous suggestions from "A high-school principal's self-rating card" by P. R. Spencer, *School Review*, April, 1922.

tion which were not found in the list. These revised lists then were collected and again considered by the class committee. This second consideration of class suggestions led through conference with the writer to the formulation as here given.

The formulation of items just referred to was then arranged in such a way as to make possible the assignment of weightings to the several divisions and subdivisions. This score card formulation was then duplicated and submitted to the forty members of the class who possessed most intimate knowledge of the work of the secondary-school principal. Each of these forty class members assigned to each main division and subdivision that portion of a total score of 1,000 which in his or her judgment best represented the relative worth of that item when considered in connection with the several items or sub-items of the list.

The forty weightings provided by the individual judgments of the members of the class group were then totaled and averages for the several "Main Divisions," "Topics," and "Subtopics" were computed. Adjustments were made by the writer so as to make the total equal 1,000. These adjustments were so slight that it was not necessary to alter the average of class weightings to any appreciable extent. The weightings as given in the card are essentially the averages of the class weightings.

That which follows is a self-rating score card for a high-school principal. The weights assigned to the several items are based on the average of forty individual judgments made by as many men and women, all of whom were familiar with the major aspects of the work of the secondary-school principal. Through the use of this card a principal can estimate the extent of his own usefulness; that is, his success in realizing the opportunities which lie before a well-prepared, alert, and industrious school executive. A high-school principal who finds that his own score on this card is less than 800 points, should unquestionably seek to understand more fully his school objectives and utilize more thoroughly the several agencies which make for increasing success in high-school administration.

Distribution of the 1,000 Point Score

Main Division		Topics		Sub-Topics	
Standard	Individual	Standard	Individual	Standard	Individual
280					
A. D. 88		102			
				21	
				17	
				15	
				18	
				14	
				17	
		69			
				18	
				17	
				19	
				15	
		64			
				10	
				9	
				11	

HIGH-SCHOOL PRINCIPAL'S SELF-RATING SCORE CARD

I. Personal Equipment

A. IDEALS

1. Have you clearly defined ideals and objectives for secondary education?
2. Does your ideal include the elements of service, integrity, sincerity, justice, and self-control?
3. Are you alert to the demands upon education involved in changing social conditions?
4. Are you committed to the principle of democracy as essential to the highest social progress?
5. Are you energetic, practical, progressive?
6. Do you take a personal interest in teachers, pupils, school, and community?

B. PREPARATION

1. Does your professional training include an A. B. degree with Education major?
2. Does it include an M.A. degree in Education, or its equivalent?
3. Have you had experience as a high-school teacher and as principal? (Full credit for 2 years teaching and 1 year principal; deduct ⅓ for each year less.)
4. Have you had contacts aside from academic training through business experience, travel, avocational interests or wide social contacts?

C. IMPROVEMENT IN SERVICE

1. Do you read the leading books on high-school problems?
2. Do you read stimulating books on the larger social phases of education?
3. Do you read current periodicals including:
   a. Leading national school journals?
   b. Leading national magazines on current events?
   c. A daily paper?

Distribution of the 1,000 Point Score

Main Division		Topics		Sub-Topics	
Standard	Individual	Standard	Individual	Standard	Individual
				8	
				10	
				8	
				8	
		45			
				16	
				16	
				13	
140					
A. D. 37		41			
				27	
				14	
		29			
				7	
				5	

4. Do you secure the recreational values to be found in fiction, biography, poetry, art, music, and drama?
5. Do you attend summer school at least one year in four?
6. Do you frequently visit other schools and attend conferences, institutes, and conventions?
7. Do you keep in touch with new high-school text and reference books, maps, and apparatus?

D. HEALTH

1. Do you conserve your health by regular and adequate physical exercise including some play types?
2. Do you conserve your health by rational diet and habits of regularity and temperance?
3. Do you take regular and adequate vacations?

II. Business Management

A. RECORDS

1. Do you keep a cumulative record of information regarding each pupil's
   a. Parentage?
   b. Home conditions?
   c. Health?
   d. Personality?
   e. Vocational choice?
   f. Scholarship?
2. Do you keep a permanent file of all reports concerning the pupil's
   a. Employment?
   b. College standing?
   c. Other successes?

B. PARTICIPATION

1. Do you participate in preparing the school budget?
2. In preparing the superintendent's report?

Distribution of the 1,000 Point Score

Main Division		Topics		Sub-Topics		
Standard	Individual	Standard	Individual	Standard	Individual	
				8		3. In selecting textbooks?
				9		4. In recommending teachers for employment or promotion?
		37				C. ECONOMY
				10		1. Have you computed the cost of instruction in terms of subject and pupil with a view to the most careful and effective use of public money?
				8		2. Have you an adequate and not wasteful equipment?
				11		3. Are you using space and time to the best advantage in recitation program, schedule of office and visiting hours, and delegation of details to others?
				8		4. Is the purchase of supplies systematically regulated?
		33				D. CARE OF BUILDINGS
				9		1. Do you inspect buildings regularly?
				13		2. Are fire hazards reduced to minimum?
				11		3. Is sanitation properly safeguarded?
207						III. SUPERVISION OF TEACHING STAFF
A. D. 43		64				A. IS COOPERATION OF TEACHERS SECURED IN
				14		1. Planning the curriculum?
				16		2. School organization, classification of pupils, the grading system, improvement of examinations?
				20		3. Use of intelligence and achievement tests?
				14		4. Vocational and educational guidance?
		75				B. DO YOU GIVE CONSTRUCTIVE CRITICISM IN
				10		1. Securing interest and attention?
				12		2. Training in study habits?
				10		3. Training in independent rational thinking?
				9		4. Discipline and moral training?

Distribution of the 1,000 Point Score						
Main Division		Topics		Sub-Topics		
Standard	Individual	Standard	Individual	Standard	Individual	
				9		5. Socializing the recitation?
				8		6. Employing the project principle?
				7		7. Other current reforms in method?
				10		8. The scientific improvement of teaching methods?
		68				C. DO YOU STIMULATE YOUR TEACHERS TO DEVELOP
				16		1. Initiative and originality by commending original plans and encouraging variety?
				14		2. Sense of responsibility, by holding them for results without dictating details of procedure?
				12		3. Professional spirit by attendance at and participation in conventions and institutes; by reading; and by visiting other schools?
				12		4. Health and vivacity by guaranteeing against their worrying and providing for group play?
				14		5. Ambition by rating them on tested merit, a graded salary, and cordial aid in their advancement?
146						IV. Social Adaptation of Curriculum
A. D. 38		44		44		A. COMMUNITY NEEDS
						1. Is your curriculum adapted to the present needs of the community, based on a survey of economic activities; school population; health, interests, and future plans of pupils?
		24		24		B. SOCIALIZED RECITATION
						1. Does the curriculum function through the socialized recitation or other social types of training?
		33		33		C. INDIVIDUAL DIFFERENCES
						1. Is provision made for individual differences?

Distribution of the 1,000 Point Score

Main Division		Topics		Sub-Topics	
Standard	Individual	Standard	Individual	Standard	Individual
		25		25	
		20		20	
134					
A. D. 29		47			
				13	
				10	
				9	
				9	
				6	
		36			
				22	
				14	
		25			
				25	

D. MORAL TRAINING

1. Is provision made for specific and conscious moral training, direct or indirect, for each year in high school?

E. SCHOOL LIBRARY

1. Is the school library utilized as a means of stimulating the interest and development of pupils?

V. STUDENT RELATIONS

A. EXTRA-CLASS ACTIVITIES

1. Do you stimulate your pupils to extra-curricular activities in ways that will train them for socially efficient citizenship, e.g. athletics, music, journalism, speaking, art?
2. Do you so guide the social activities of your pupils as to make them contribute to this training for socially efficient citizenship?
3. Do you encourage aesthetic development of pupils through musical, dramatic, and literary entertainments by professional artists?
4. Do you stimulate responsibility for leadership on the part of the largest possible number by means of a point system of student activities or other device?
5. Do you advise on inter-school contests, literary, athletic, etc?

B. PHYSICAL TRAINING

1. Do you provide for all pupils physical training adapted to their needs, based on physical examination?
2. Do you secure the cooperation of each teacher in maintaining the health efficiency of the pupils?

C. STUDENT RESPONSIBILITY

1. Do you encourage student responsibility in class and study room, in school government and discipline?

Distribution of the 1,000 Point Score

Main Division		Topics		Sub-Topics		
Standard	Individual	Standard	Individual	Standard	Individual	
		26				D. STUDENT ATTITUDES
				14		1. Do students take you into their confidence?
				12		2. Do students welcome your participation in their activities?
93						VI. COMMUNITY RELATIONS
A. D.						
28		37				A. PARTICIPATION
				18		1. Do you participate and lead in the serious and social activities of your community?
				9		2. Do you encourage scholarship aid?
				10		3. Do you provide aid in securing employment for pupils and graduates?
		2			9	B. PUBLICITY
				29		1. Do you keep the public acquainted with the aims, needs, and achievements of the school by varied types of publicity, e.g., exhibits, visiting days, newspapers?
		27				C. CONFERENCE
				15		1. Do you take the community into your confidence by frank discussions of your aims and policies; e.g., in parent-teacher meetings or special community conferences?
				12		2. Do you cooperate in the correlation of high school with elementary school and college?
1,000		1,000		1,000		

Validity of judgments.—That the average of the judgments of competent persons is a better measure than the judgments made by any one of the persons is a matter on which statisticians do not disagree. Individual judgments made by group members commonly show wide deviations from the average. In this case one member of the class group, himself a college teacher of education, assigned a 500 score to *Personal Equipment,* whereas the class average was 280 for this item. The Average of the Deviations (A.D.) of the class scores on this item was only 88; that is, approximately 57 percent of the scores lay between 280 ± 88 or between 192 and 335. Again, this same judge assigned 445 points to *Ideals* and only 20 points to *Preparation* as opposed to the class average of 102 points for *Ideals* and 69 points for *Preparation.*

That a measure of the variability of the judgments may appear in connection with each score which represents a group judgment on each of the several "Main Divisions," the A.D. or average of the deviations of the individual scores is set down for each of these six divisions. The validity of the average scores as here given is illustrated by the fact that the averages were first found for twenty-five judgments and later for the forty judgments. The differences between these two averages were so slight as to make the average of the twenty-five judgments practically as good a measure of the relative worth of the several items as was the average of forty judgments.

The card in its present form sets forth a majority of the items of preparation, attitude, and activity, which may well characterize the equipment and technique of a high-school principal. In addition, the weights assigned to the several items make it possible for a high-school principal to check his own judgment of relative values against that of forty experienced and professionally minded students of the work of a high-school executive.

In conclusion.—The above score card is a tentative formulation, but it will doubtless provide for the high-school principal a useful means of self-analysis. The writer will gladly receive suggestions for the improvement of this score card to the end that a final form may show improvement where such is possible.

Editorials

A COMMON PROBLEM

It is evident that our friends across the Atlantic are facing some of the same problems that we are in America. Prominent among these problems is that of an adequate supply of trained teachers. The advocates of economy—those, at least, who claim to be interested in economy but who regard the term as synonymous with reduction of expenses—are active in Great Britain as well as in the United States. Two quotations from the *Teachers World* (London) of September 5, 1923, have a bearing upon the situation. The writer of one of them says: "There are thousands of unqualified or semi-qualified persons engaged in our state schools, and yet the boards of education are seeking to discourage any addition to the number of qualified teachers. If this is too costly an undertaking, let us cease to pretend that we are seeking to become an educated nation. One thing is certain, that we cannot be educated properly by ignorant and untalented young women however amiable they may be. It is a real wasting of money to employ them in the schools."

That quotation properly expresses the personal opinion of every one who is directly interested in education in this country. If we substitute for "state schools" the words, "public schools," and if we understand by the "boards of education" any board of education in any of our commonwealths, the statement fits the conditions anywhere in the United States. Perhaps our boards are not "seeking to discourage any addition to the number of qualified teachers"; but by hiring as cheaply as possible, by failing to make salary discrimination in favor of superior training, and by employing teachers to teach subjects and grades for which they have not prepared, many boards are producing this very effect.

The second paragraph hits another fact which a great many persons who are talking about the training of teachers have certainly overlooked: "The training of teachers ought never to have become a local enterprise at all. One of the chief merits of the old system of colleges was that young people were compelled to leave home for a time and to live amid new surroundings. Today there are teachers who are student teachers and teachers in training in their home towns, and after college they became teachers in the same town and sometimes in the same school. This limited experience is harmful to their work. The greatest argument in favor of a university experience for all teachers is the opportunity to mix with men and women from other districts and of varied social grades. Teachers should not be treated as a separate class. Their task demands that they should be able to meet their fellow citizens on equal terms."

Having made a geographical distribution of the homes of students in teacher-training institutions and having found that a very large proportion of them live within a radius of thirty or forty miles of the school which they attend, many writers and speakers on the subject of teacher training have advocated an increase in the number of state normal schools or county normal schools or normal-training departments in local high schools. Many states have definitely committed themselves to such a program, oblivious of the fact that there is a definite merit in compelling young people to leave home for a time and to live amid new surroundings. They have been unmindful of the truth that the teachers' task demands that they shall be able to meet their fellow citizens on equal terms.

"If the mountain will not come to Mahomet, then Mahomet will go to the mountain" has often been quoted to prove that teacher-training institutions should be brought to the communities in which possible teacher-students live. By some obscure process of reasoning the normal school is considered "Mahomet" rather than the "mountain."

It has been argued that the county normal school or the normal-training department in the local high school will better

prepare teachers for the rural schools because these institutions will present the rural viewpoint. It is a little hard to see how they will better present the rural viewpoint than the well-equipped state normal school or teachers college unless that viewpoint is chiefly characterized by narrowness of opportunity and smallness of vision. The state normal school has a larger and more highly specialized faculty. Its equipment, though perhaps inadequate, is far superior to that of the local school with an enrollment of six to twenty students. If two-years work in a state supported teacher-training institution, can scarcely ensure real professional training, what may be expected of the work in these smaller schools, where one or two teachers must not only present subject matter and method in a large number of subjects, but must do so in a one-year course? If it takes two to four years of college training, four years of professional work, and a year of internship to prepare a doctor to care for our bodily ills; two years of college and three years of professional work to train a lawyer to look after our property interests; by what process of reasoning may we expect a teacher to be prepared in the local high school or county normal in one year's time to guide the mental development of our children?

Those in America who are struggling valiantly to place the training of teachers upon a broad professional basis will feel encouraged by the knowledge that the same battle is being waged across the water.

E. J. A.

Reviews and Abstracts

GESELL, ARNOLD. *The pre-school child from the standpoint of public hygiene and education.* Boston, Houghton Mifflin Company, 1923. 264 p.

The pre-school child has suddenly become more important in the realms of education and of public health than ever before. A book devoted to him from the pen of an authority such as Doctor Gesell finds an enthusiastic welcome. The eager reader meets with one real disappointment which may as well be stated at the outset. It is that the book contains no reports of Doctor Gesell's original researches with young children. Indeed it is not a study of the pre-school child himself, but of social and educational policies toward him.

The introductory chapter contains a vivid statement of the great importance to the individual of the first five years of his life, a period during which he does far more growing, and far more learning than in any other equal span, while at the same time he is more liable to disease, physical defect, and death than at any other time—crucial years indeed. One marvels afresh, after reading the chapter, that the pre-school years have been neglected by health authorities, social workers, and educators alike. Doctor Gesell sketches the growing sense of social responsibility for the physical welfare of young childhood from the days of infanticide through the reign of the doctrine of infant depravity down to our present attitude of cherishing and respecting infancy. He describes the way in which the increasing concern for the health of young children embodies itself in the keeping of vital statistics, in infant welfare stations, in baby-week campaigns, in prenatal clinics, in the children's year campaign, and in the Sheppard-Towner Maternity bill.

The part of the book dealing with the educational deficiencies of young childhood and the possible methods of making them good will be of special interest. Inadequate as is the provision for physical care, that for mental hygiene and for education in early years is even less. The English nursery schools, the three nursery schools in the United States, and the Montessori schools are discussed as constituting what there is today which can be classed as educational effort for children under five. The method suggested for making good the defect is to remodel the kindergarten and enlarge its functions. The new type of kindergarten would assume very definite responsibility for the physical welfare of its charges, would admit children as young as two, and would conduct courses of training in child care and child management for adolescent school children. It would become a far more scientific and far less sentimental institution than the kindergarten of today.

The ideals which Doctor Gesell outlines for the kindergarten are exactly those now being put into practice by some nursery schools. It matters little ultimately whether this type of addition to the educational system be called kindergarten or nursery school. When he says that "in principle the distinctions between nursery, nursery school, and kindergarten ought to disappear," we find ourselves heartily in agreement.

In discussing preparental education, Doctor Gesell refreshingly maintains that boys as well as girls should receive training intended to give them an insight into the ideals and responsibilities of home life, and some preliminary experience with young children, such as that afforded by helping with the care of children in a nursery school. He emphasizes the fact that even home-making for girls has put too much stress upon techniques, and too little upon spirit and ideals. His point of view is summed up in saying "Surely we can develop a type of home-making education which will bring the realities and significance of childhood into the vision of youths who, in a few years, will be fathers and mothers. Unless we really bring such a vision, this education is virtually a failure, and if we succeed in developing a sincere, sound type of preparental education, we shall find that by a benevolent process of substitution we have also, in large measure, solved the so-called problem of sex education."

While Doctor Gesell has stated convincingly the possibilities of a school for very young children (under whatever name) as a laboratory for training future parents, he has not set forth with real conviction its importance as an adjunct to the home training of the child. The choice before us is not that between removing a child from its home to a "glorified state nursery" and leaving it to the unaided effort of the individual parents. The advantage to the child between two and five of spending a few hours of each day away from its mother, in charge of an educational expert, with a group of children of his own age who are provided with adequate equipment for educational play, deserves far greater consideration than it receives.

Perhaps the greatest value of the book is the convincing way in which it sets forth the idea that the system of public education must find some method of training young people for the specific tasks of parenthood if our most insistent problems of health and education are to be solved.

HELEN T. WOOLLEY

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DEAN ARTHUR. ***Just between ourselves; practical talks to industrial and vocational teachers.*** Peoria, Illinois, Manual Arts Press. 1923. 208p.

As in other realms of human endeavor, so in that of writing textbooks, a large degree of uniformity, both in content and manner of treatment, almost invariably appears. It is therefore exceedingly stimulating, to say the least, to run across a book, especially an educational book, that departs somewhat from the more or less usual set type of educational texts. For a well-edited and a well-published volume of twenty-eight chapters of interesting and, for the most part, instructive discussion of up-to-date phases of

education is indeed a rare thing in educational literature. With perfect propriety these chapters might be termed "intimate essays" on current problems in the field of industrial and continuation-school education. (In passing it might well be noted that practically all of this material has appeared during the last two years in the columns of either the *Manual Training Magazine* or its successor, *The Industrial Education Magazine.*) In part these essays are inspirational, in part more or less critical, and in part somewhat prophetic; but whatever their other qualifications, they are in all instances entertaining and thought provoking. On the whole, it may be said that this is just the type of educational literature that one would care to place in his "grip" when he has a railroad journey of several hours duration ahead of him. While it is not heavy reading matter, on the other hand it is not light. It has that rare quality of stimulating and instructing while it entertains.

To what extent educators who still remain uniformed, yet more or less hostile toward certain types of vocational education, will be inclined to depend upon publications of this character for authentic information is of course a question that may well be raised. It is to be hoped that they will not rely overmuch upon such sources of information, for, as the title indicates, this was evidently not the purpose of the volume under consideration. Rather was it intended primarily for "home consumption."

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Phillips, Claude A. *Modern methods and the elementary curriculum.* New York, The Century Company, 1923. 389 p. (Century Education Series)

The first three chapters of this book are devoted respectively to "Objectives in Modern Education," "Dominant Characteristics of Children," and "How Children Learn." The remaining sixteen chapters treat of the subjects of the curriculum of the elementary school. An appendix of five parts includes "One Hundred Spelling Demons," "A Suggested Minimal Spelling List Arranged by Grades," "A Minimum Word List" from Tidyman, "A Minimal List of Essentials in the Teaching of United States History" from Bagley, and "A Children's Code of Morals" from Hutchins.

Each of the subjects of study is introduced by a brief historical summary of its place in the elementary school. In discussing the methods of teaching each respective study, the selection of its content, and the means of measuring results in its pursuit, the author makes note of most of the reports on related research studies of recent years. A brief reference list is given at the conclusion of each chapter. Preceding these reference lists are lists of questions to be answered from the text or from the references. The book has a good index.

The author regards it as his province in this book to bring together those contributions to educational theory and practice which seldom reach the rank and file of teachers in the usual sources of their publication. In this respect he regards himself as "playing the rôle of codifier."

In such a treatment, interpretation as well as exposition is almost necessary. With all of his interpretations it is beyond a peradventure that all

students of education will not agree. When the psychologists read in the Preface that the newer psychology "emphasizes continually the right sort of habit formation to the exclusion of other types of experience," they may express doubt as to the validity of the conclusion. Technical students of education will frequently find phrasings which they will question.

As used in this book, the term, project, signifies some practical activity and does not relate to the more fundamentally significant features of the project method. In the author's treatment of drawing, manual training, and home economics, he seems not to have been aware of the extensive work of Miss K. E. Dopp of the University of Chicago or of Miss E. V. Dobbs at the University of Missouri; nor does he appear to be acquainted with the newer phases developing during the past decade under the term, industrial arts, or of the excellent courses and results in this field in Philadelphia, Grand Rapids, Kalamazoo, Seattle, and several other communities whose courses of study or monographs have been available for a considerable time.

Apart from the interpretations and applications of the more specialized research studies, the book contains many suggestions which should be of immediate usefulness to young teachers. To bring together the findings of the researches published in the more technical journals and relate these to the teachers' problems of selection of material and methods of teaching is a worthy purpose. Teachers not having original material available or not having the training to interpret it will find this book useful for the help it will yield and for its stimulus to further study.

FREDERICK G. BONSER

Teachers College, Columbia University

STRAYER, G. D. AND ENGELHARDT, N. L. *Standards for elementary-school buildings.* New York, Teachers College, Columbia University, 1923. 57 p.

The score card for measuring city school buildings developed by Strayer and Engelhardt several years ago, has been used very extensively, and has influenced the construction of many new buildings throughout the country.

With the rapidly increasing knowledge in respect to the proper kinds of school buildings for elementary- and high-school pupils, it has been found necessary to differentiate rather sharply between the standards for different types of schools. Just as a score card for rural schools cannot be applied to a city system, so it is not entirely practical to have common standards for elementary- and high-school buildings. The present monograph is an outgrowth of the experience of the authors in evaluating more than a thousand school buildings, and in the careful study of building standards. The standards may be used to advantage for two purposes: (1) the scoring of a school building in light of a school-building program to be developed by a committee, and (2) the checking of plans for any school building.

Many of the school buildings now being erected could be greatly improved, if the standards suggested in this monograph were carried out. Some of the most obvious faults which influence the health of children are unnoticed both by architects and superintendents. Although the standards were originally

developed for survey purposes, the average superintendent can use them to great advantage in improving his local housing conditions. The next step in developing standards should be with reference to high-school buildings. Work of this kind is now in preparation by the present authors.

P. R. STEVENSON

Ohio State University

LINK, HENRY C. ***Education and industry.*** New York, The Macmillan Company, 1923. 265 p.

The field of training in industry has, up to the present time, been largely unknown territory to the average educator; and even those actually engaged in this line of work have, in many cases, failed to grasp its full scope and possibilities. The educator lacks contact with industry; and those actually engaged in the field are to a great extent working on individual problems.

The need for a general survey of this whole phase of educational activity has been evident for some time and Mr. Link is to be congratulated on having seen the need and met it in so adequate a way in his latest book.

This book, ***Education and Industry,*** is practically the first comprehensive discussion and survey of the field. Mr. Link is careful to indicate that the points presented and the conclusions reached are individual opinions; but any one who knows his experience and work will not fail to give these opinions great weight.

The treatment includes not only problems in the field of direct training by business and industrial concerns but also very timely discussions as to the relative responsibilities of the public and the employer for providing adequate education, both vocational and general.

The book includes in its scope such matters as Americanization, the responsibility of the community for general education, vocational guidance and industrial education, and the responsibility of industry for general education. A number of chapters also deal in a very illuminating way with certain devices such as the vestibule school, trade schools, Americanization work, and the use of industrial motion pictures.

Especially worthy of comment is the effective way in which Mr. Link has emphasized the relation of education to the establishment of morale and the degree to which this must be recognized in many forms of training in industry. Another point which is well brought out is the effect of specialization of work on the whole question of industrial training and the degree to which this affects objectives and methods.

As a general survey of a comparatively unknown field, the book is to be recommended to all engaged in educational work. To the educational director in industrial plants, it should be of great value in assisting him to think straight on a number of his problems and to deal with them more effectively.

In a book of reasonable size covering so wide a field, it is inevitable that the contents should be somewhat general in character. At many points one would wish that it had been possible for the writer to go into greater detail. Taken as a whole, the book is a very distinct addition to the literature of

modern education and as such it should be of great service to all engaged in the work.

CHARLES R. ALLEN

State Agricultural College, Fort Collins, Colorado

WILDEMAN, EDWARD. *The teaching of fractions.* Chicago, The Plymouth Press, 1923. 145 p.

For the inexperienced, inadequately trained teacher, this book will be of little value. The author's point of view can hardly be called "modern." He is either unacquainted with the contentions of recent writers in the psychology and sociology of arithmetic or he ignores them.

An illustration will make the point clear. On pages 46-48, the subject, "Highest Common Factor. Reduction to Lowest Terms," is discussed in these words: "We observe that as we use a larger factor to divide the terms of the fraction, the resulting terms become smaller. Since it is convenient to write a fraction in the lowest terms in which it can be expressed, it is desirable to use the largest possible factor as divisor. This we call the *highest common factor,* written in abbreviated form: H. C. F. . . . . *The highest common factor of two numbers is the largest number by which both can be exactly divided. To reduce a fraction to its lowest terms, divide both numerator and denominator by their highest common factor.* . . . . A few simple rules of divisibility will be helpful in this matter, and should be applied in a few exercises, for their theoretical as well as their practical interest." Then follow rules for telling when a number is divisible by 2, 3, 4, 5, 6, 9, 10, 12, and 15—detail which, in the reviewer's opinion, cannot be justified for grade classes. Furthermore, modern textbooks tend to eliminate all reference to "Highest Common Factor."

A book which gives pupils 450/675, 540/756, 180/288, etc., to be reduced to lowest terms and which requires them to find the least common multiple of 72 and 108, 48 and 80, 36 and 45, etc., will hardly commend itself to the up-to-date teacher or superintendent.

The author has evidently given considerable attention to the teaching of fractions. He describes in detail the procedures which he would have followed. The experienced, well-trained teacher may read the book with some profit; but to do so, one must be well grounded in the recent literature on the teaching of arithmetic.

R. L. MORTON

Ohio University

COMMITTEE FOR THE STUDY OF NURSING EDUCATION. *Nursing and nursing education in the United States.* New York, The Macmillan Company, 1923. 585 p.

This is a unique book, representing investigations which have been definitely under way since January, 1919. It contains the advice of leaders in the field of medicine and nursing, and consequently it is of the highest authority. The Committee which presents the report was appointed by the

Rockefeller Foundation to conduct a study "of the proper training of public health nurses." It soon became clear that the entire problem of nursing education needed to be considered as one essential whole if sound conclusions were to be attained. Josephine Goldmark conducted the surveys and acted as secretary of the committee. The most valuable outgrowth of the original purpose is the detailed study of existing conditions and future possibilities in hospital training. The book satisfies a real need; it contains the kind of information and comment which is required to perfect improvements in nursing education. The reports are arranged so as to impress those who are not especially interested in nursing education. Their impartiality and thoroughness make the conclusions worth serious consideration.

The report undoubtedly "lays open" conditions as they are in the field of nursing. It may come as a revelation to some, but it includes much that is obvious and well known to the technical reader. The book should command a wide audience, since the education of the nurse is a community problem.

The university school of nursing is described as the most notable feature in the progress of nursing education during the past ten years, and the strategic position which the university schools of nursing will occupy in regard to the whole movement indicates their development as of special importance. "The five-year university course in nursing means at least two years of culture that will give the nurse a fitting basis for her education and anything else that the profession of nursing offers to her today. It also includes two years of practical training in the hospital, and then the final year of advanced study in nursing education or in public health nursing."

The report reveals the fact that there is no shortage of nurses in this country but that a redistribution of nurses is needed. We are impressed with the hard-earned experience which nurses still receive in hospital schools, and realize that these schools have made progress slowly. The Committee reminds us again and again how far from scientific is the education of nurses at present and emphasis is laid on the scientific method of instruction. We appreciate more and more while reading the report the tremendous value that lies in the university school of nursing and we agree with the conclusion that schools for nurses must have endowments.

NORMA SELBERT

Ohio State University College of Medicine

HINES, HARLAN C. *A guide to educational measurements.* Boston, Houghton Mifflin Company, 1923. 270 p.

One cannot always tell what a book is by the title which it bears. Professor Hines has selected a good title and Professor Cubberley has written an excellent editor's introduction. It is quite natural, therefore, for one to hasten to the reading of the book with the expectation of finding that which he had long sought in vain.

But the author unfortunately fails to make good the recommendation of his editor. A necessary quality in a good guidebook is definiteness and reliability. This book fails to meet either standard satisfactorily. Some of the

statements are positively misleading and confusing to the inexperienced student. On page 31 for example, we have, "When we admit the *existence of a tendency of two powers or traits to vary together*, we speak of the powers or traits as having a certain amount of *correlation*. Does weight increase with height? Does salary increase with tenure? Do we grow more intelligent as we grow older?" Are we to infer that there is no such thing as negative correlation?

The formula given on page 38,

$$r = \frac{\frac{\Sigma xy}{N} - c_x c_y}{\sigma_x \sigma_y}$$

is confusing because the author fails to give the values of σ_x and σ_y. It is bad mathematics to refer the numerator to one origin and the denominator to another. In this case the x and y in the numerator are measured from the assumed mean, while in the denominator the true mean is the origin. The author also fails to tell the student how to find c_x and c_y.

On page 39 we find

$$r = \frac{(\Sigma xy.N) - (fd_x.fd_y)}{\sqrt{[\Sigma fd_x^2.N - (\Sigma fd_x)^2]\,[\Sigma fd_y.N - (\Sigma fd_y)^2]}}$$

The author calls this the Willis formula but neglects to give a reference to where he got it. This formula is or should be derivable from the one given on page 38. If one substitutes in the latter the values of c_x, c_y, σ_x, and σ_y, one will get what the so-called Willis formula *should* be. The first quantity in the second bracket under the radical should be Σfd_y^2, and the quantities fd_x and fd_y in the numerator should be Σfd_x and Σfd_y respectively. The formula is, of course, useless in the form in which it is presented.

On page 39 the reader is told that correlation is usually said to be high when it is above 0.60. But a correlation coefficient of 0.60 means an alienation or *independence* coefficient of 0.80. It would seem therefore that the word "high" is used with a grain of salt in this connection.

The chapter on the "Measurement of Intelligence" would be more valuable if the author had defined his use of the word intelligence. He is evidently thinking of abstract intelligence only. On that basis his discussion is valid. It does not apply, however, to mechanical and social types of intelligence.

The book fails to give adequate help in the interpretation of intelligence test results. The title "A Guide to Educational Measurements" would also lead one to expect more definite instructions as to the tests to use and the circumstances under which they are useful, yet that task is artlessly placed upon the teachers' shoulders (page 114).

In each of the chapters dealing directly with achievement testing there is a paragraph headed "Materials Needed," in which four or five tests are listed. One looks in vain, however, for guidance in the use of specific measuring instruments. There is little to tell us which test is best under specified conditions. This is particularly true in the case of reading and language. In arithmetic some information of this sort is afforded, but it is not always accurate. For example, the author implies that the Woody scales cannot be used success-

fully for diagnostic purposes (p. 157). The author's general attitude seems to be summed up in his words. "In choosing tests for the different subjects, the teacher must determine what it is she wants to measure, and why the measurement is to be made." (p. 243) This conception of "Guidance in Educational Measurement" is entirely inadequate. The teacher wants a sort of guidance which will tell *her* what test to use and *what to do about it* after the test is given. Unless these questions are answered the whole testing movement will fail so far as the improvement of instruction is concerned. The desire of the author to designate a three-foot shelf of tests is commendable. Such a shelf should include only the best from the standpoint of reliability, validity, and ease of administration. The author's three-foot shelf, however, does not meet these specifications. It includes tests which are commonly known to be unreliable and omits those which are proved of value. To fail even to mention such tests as the Thorndike Work Book, the Thorndike-McCall Reading Test, the Thorndike Test of Work Knowledge, the Otis Self-Administering Intelligence Test, the Cleveland Survey Arithmetic Test, the Studebaker Practice Test, and all but one of the Latin Tests used by the Classical League seems quite inexcusable. Nothing at all is said concerning the relative ease of administration and scoring.

The book contains much that is good but nothing additional to what is already in print. The author deserves credit for attempting to treat the three fields mentioned by the editor—"the elements of statistical procedure, intelligence testing, and the use of a selected list of educational tests"—and for his temerity in attempting the three-foot shelf plan. The book is gotten up in pleasing form, written in good English style, published by a reputable company, and highly recommended by a reputable editor. It gives good descriptions of most of the more important intelligence and achievement tests. But all of the merits of the book will scarcely out-weigh its defects. It contributes little or nothing to what is already available and it is difficult to understand why it should be commended so highly by its editor or even published at all at the present time.

WORTH J. OSBURN

State Department of Public Instruction, Madison, Wisconsin

NATIONAL COMMITTEE ON MATHEMATICAL REQUIREMENTS. *The reorganization of mathematics in secondary education.* Oberlin, Ohio, Mathematical Association of America, 1923. 652 p.

The Mathematical Association of America, in 1916, appointed a committee of six members for the purpose of giving national expression to the movement for reform in the teaching of mathematics and to defend mathematics from some unjust attacks being made upon it as a high-school study. Later seven teachers of secondary mathematics from all parts of the United States were added to the committee. The expenses were met by generous appropriations from the General Education Board of New York City. The report is the result of seven years' work by the committee somewhat interrupted by the World War. This final report is published after numerous preliminary reports were discussed and criticised by nearly 100 teacher organizations and is thought

to have the approval of the great majority of progressive mathematics teachers throughout the country.

Part I (85 pages) is given to the statement of general principles and committee recommendations and consists of eight chapters: (I) A brief outline of the report; (II) Aims of mathematical instruction—general principles; (III) Mathematics for years seven, eight, and nine; (IV) Mathematics for years ten, eleven, and twelve; (V) College entrance requirements; (VI) List of propositions in plane and solid geometry; (VII) The function concept in secondary-school mathematics; and (VIII) Terms and symbols in elementary mathematics. Part II (567 pages) gives the results of special investigations conducted for the National Committee; (IX) The present status of disciplinary values in education; (X) The theory of correlation applied to school grades; (XI) Mathematical curricula in foreign countries; (XII) Experimental courses in mathematics; (XIII) Standardized tests in mathematics for secondary schools; (XIV) The training of teachers of mathematics; (XV) Certain questionnaire investigations; and (XVI) Bibliography (since 1912) on the teaching of mathematics.

In the brief space allotted to this review it is quite impossible to digest in detail the contents of this very valuable report; every one interested should make a careful study of the report itself as the latest and most widely accepted discussion of mathematical education. We give just a few of the conclusions: Subject matter for each course should be determined by present value to the pupils rather than by the preparation given for courses which may be taken later; with proper restrictions, general mental discipline is a valid aim in teaching mathematics; the junior high-school organization is approved and its general adoption is urged to secure greater efficiency in the teaching of mathematics, however the reforms recommended may be adapted to the 8-4 plan; no particular order of topics or single organization of materials is recommended as the best, but five good plans of organization are suggested; general (not unified) courses are looked upon with favor; recent excessive emphasis on manipulation is one of the main obstacles to intelligent progress, and skill in manipulation must always be a means to an end and not an end in itself; the mathematics materials recommended for years seven, eight, and nine should be required of all pupils; demonstrative geometry is approved as a high-school subject; great care should be used in making deductions from correlation coefficients, the data should include large numbers and all sorts of schools.

ERNEST B. LYTLE

University of Illinois

News Items and Communications

This department will contain news items regarding research workers and their activities. It will also serve as a clearing house for more formal communications on similar topics, preferably of not more than five hundred words. These communications will be printed over the signatures of the authors. Address all correspondence concerning this department to Doctor E. J. Ashbaugh, Ohio State University, Columbus, Ohio.

The September number of the *Tennessee Educational Bulletin*, published by the State Department of Education, presents the educational objectives or ambitions of a number of county superintendents of the State. It is noticeable that, while expressed in various terms, better qualified teachers, better attendance, and better buildings are emphasized by a majority of the superintendents.

The *Maryland School Bulletin*, issued by the State Department of Education, for September, 1923 is devoted to the subject "Worth-While Teachers' Meetings." The material in the Bulletin was contributed by workers in the supervisory field, and was drawn from successful practical experience. The Bulletin is closely packed with data useful to any superintendent or supervisor, and is liberally supplied with references to published material.

According to reports received by the Federal Bureau of Education, Latin is studied by 22.33 percent of the high-school students enrolled in cities of 100,000 or over. This is a larger percent than is found for any other foreign language.

An *Arithmetic Problem Analysis Test* by Doctor P. R. Stevenson has been issued by the Public School Publishing Company. It is a test of the ability of pupils to read problems in arithmetic understandingly before making the numerical computations. Each problem requires an analysis to determine (a) the facts given; (b) what is to be found; (c) the approximate size of the numerical answer; and (d) the arithmetical process required. The test provides a means of scoring which is entirely objective for each of the four requirements.

We have just received from the Baltimore, Maryland, Bureau of Research, a device called the "Baltimore Age Calculator." It is built on the idea of the slide rule. By moving a slide, and by placing an arrow upon any particular month to which ages are to be calculated, the ages in years and months or in

total months can be read directly for all children between the ages of six and seventeen without further adjustment. School officials who find it necessary to compute ages may do well to get in touch with Doctor J. L. Stenquist, director of the Bureau.

Under the present laws of the State of New York, responsibility is placed upon the public schools to pass upon the qualifications of new voters as to their literacy. All new voters, whether native or foreign born, masculine or feminine, who have not been graduated from the elementary schools must present a certificate of literacy to the Board of Registration on the day of registration. Failure to present such certificates of literacy or evidence of graduation will prevent the applicant from registering for voting. Literacy tests are conducted by such evening elementary schools as have been authorized by the superintendent of schools, and certificates of literacy are issued by the State Board of Regents.

At the State University of Iowa a very intensive township survey is being conducted. In this survey the Extension Division of the University through its education service is cooperating with the Child Welfare Station of which Doctor Bird T. Baldwin is director. The outstanding characteristic of this survey is the thoroughness with which the entire situation is being studied. Data on the social, economic, intellectual, and educational status will be secured. A more detailed statement will be found in this issue of the *Journal* in the Educational Research Association Department.

Superintendent David B. Corson of Newark, New Jersey, presents in his annual report the most comprehensive discussion of the all-year school that has come to our attention. Not only are the theoretical advantages and disadvantages set up, but actual data from comparison of schools within the city are presented also. The general conclusion seems to be well stated in the following: "It is a debatable question whether rapid, regular, and slow classes in ten-months schools, properly administered, with a summer term for redemption of failures, are not as effective in accelerating pupils as the all-year plan."

Although New York City already has three teacher-training schools, a plan is under consideration to establish a central training school which would in effect be a laboratory for educational experimentation. Graduate courses in education would be offered, but apparently the plans look forward primarily to the establishment of a centralized institution which would be a place for testing and proving or disproving the value of educational activities, ideas, and theories.

The arts college of the University of Michigan has taken action looking towards more adequate treatment of the superior student. This action recommends the formation of special or "honor" sections in all courses where

there are as many as six or eight sections. Distinctly superior students—their superiority having been proved by the character of their previous work in the same subject—will be invited to enroll in these sections. The extent to which this recommendation on the part of the college is followed will depend upon the individual departments. They have sole charge of the administration of the plan.

During the convention of the American Public Health Association at Boston, October 8-11, 1923, a number of meetings were held at which various aspects of school health work were discussed. The program included among other topics the following: "The teacher's part in health education"; "Standardization of school medical instruction"; "The growth of children"; "Health standards for schoolhouse construction and sanitation"; "The place of mental hygiene in the school program." Exhibits of various kinds of school health work were also presented. These were largely in connection with the school systems of Boston and its suburbs.

The National Union of Teachers, the English counterpart of our N. E. A., has a committee on the training of teachers. The committee's recent report recommends that teachers for both elementary and secondary schools should have four years of training following a full secondary-school course. These four years should consist of three years of university work plus one year of professional training. This recommendation is in substantial agreement with that of the Scottish Educational Institute and with the report of the Ministry of Education of Northern Ireland. If England, Scotland, and Ireland can set such goals in their job of the training of teachers, should American commonwealths continue the practice of requiring only a few weeks or a year of training beyond high-school graduation?

If you were asked what the best taught subject is on the campus of any of the larger colleges or universities, what would your answer be? We lately read a statement to the effect that football is the best taught subject in our higher educational institutions. The reason for this was stated to be that the teachers of football are judged by results. It was maintained that no other type of college teacher is so judged. The teacher of football must make good in order to hold his job. Other teachers hold their jobs whether they make good or not.

Birmingham, Alabama, opened its schools this year for the first time with an eight-year elementary course. For fifty years the schools have been run on a seven-year basis, but Superintendent C. B. Glenn has convinced his board that an eight-year course will more satisfactorily equip the children of Birmingham to compete with children taught elsewhere and will also make possible, in the near future, re-organization on the 6-3-3 basis. The use of intelligence tests in the classification of beginning children, and the introduction of the platoon school are among the progressive steps inaugurated this year.

We are interested in the twenty-two experimental schools which have been established in New York City in connection with the survey which Superintendent Ettinger has been conducting since October, 1922. "In these schools," says the *New York Evening Mail*, "the course of study has been modified, the system of rating and promoting pupils has been changed, and other experiments have been made in an effort to find a way of shaping the school to the needs of the individual child." We hope to be able to present to our readers a more detailed statement of the investigation which is being carried forward through the instrumentality of these schools.

The wave of economy which has passed over the country during the past few years has exterminated a number of all-year school experiments which were in progress. This has not been true, however, at Ardmore, Oklahoma, where Superintendent Richards has been conducting an all-year school for eleven years. All teachers are under a twelve-month contract, and the summer quarter is on the same basis as any other quarter of the year. While the scheme has increased the budget about twenty-five percent, Superintendent Richards thinks that it has been an actual economy, since it has practically done away with the repeater in the school system. The form of organization is popular with the teachers as evidenced by the fact that there was only a seven percent turn-over this last spring.

Doctor W. W. Coxe, the new chief of the Bureau of Educational Measurements in the New York State Department of Education, reports that he and his colleagues are concentrating on reading during the present year. In cooperation with Mr. E. D. Richards, state supervisor of English, he is planning to get out a series of bulletins on the teaching of reading. Each of these bulletins will take up a single phase of the subject and discuss it under the following heads: (1) methods of diagnosing pupils with respect to this phase; (2) probable cause of any defect that may be found; (3) remedial measures which can be used to correct defects.

Other problems upon which he is working are: The best way of grouping pupils in small rural schools; a language test for survey purposes; and a spelling list for use in high school.

At Logansport, Indiana, a considerable development has taken place in the system of reporting to parents. One of the most interesting of the forms adopted is the 8-page *Habit Report* which is used in the kindergarten and primary grades. Two pages are devoted to explanation and directions. Seventy-nine desirable habits (positive and negative) are listed under the general headings, Health Habits, Personal Habits, Social-Moral Habits, Intellectual Habits, and Motor Skills. A check mark indicates that the child has developed the trait or habit to a satisfactory degree. A minus sign means that improvement is desirable. No teacher marks a child on all these habits at any one time. Indeed, teachers are advised never to indicate as formed or as weak a total of more than fifteen of them. The capacity of the report is

sufficient to provide a continuous record from the time the pupil enters school to the time he is promoted to the third grade.

The following graces the front page of *Better Schools Bulletin*, the official organ of the Ohio State Department of Education, as the program of the department for the current year:

OHIO'S SCHOOL PLATFORM

1. Adequate high schools for ALL children.
2. More junior high schools.
3. Classes for foreign-born and for illiterates.
4. Part-time or continuation schools.
5. Vocational classes or schools.
6. A flexible system of promotion.
7. Special classes or schools for special types of children.
8. Definite measurement of results.
9. Adequate provision for health education.
10. Equalized educational advantages through improved rural schools.

Superintendent L. L. Caldwell of Hammond, Indiana, made reading a subject of major interest in his supervisory work this past year. The problem was discussed in teachers' meetings, bulletins were issued to the teachers, and a real supervisory effort made to increase efficiency in this subject. The unique thing about the drive, however, was that near the close of the year Superintendent Caldwell and his assistant collected more than a hundred questions from the teachers in the several schools regarding various phases of the problems which had confronted these teachers in their classroom work. The questions were first brought together by grades. A bulletin was then issued containing the questions together with answers which would assist the teachers in solving their problems. The answers frequently cite previous bulletins or published material such as definite chapters or pages in MacMurray's *How to Study*, Clapp's *Teaching Children to Read*, etc. When teachers feel free to ask supervisors definite questions regarding method and curriculum material and when supervisors answer them in as helpful a vein as is evidenced in this bulletin, increased efficiency is practically assured.

The high cost of school sittings is a matter of no small concern in New York City in connection with the huge building program which is going forward there. The authorities have also been greatly interested in the question of speed of construction. This has led to the letting of contracts which stipulate early completion of the buildings with the added cost which such a type of contract inevitably involves. The possibilities of concrete construction are being seriously considered not only because such construction may do away with much of the delay involved in the erection of brick walls but also because it is hoped that the cost of school sittings may thus be decreased. Among the high schools now being erected at New York City the cost per sitting varies from $630 to $880. Corresponding costs for elementary-school buildings

are lower; but the lowest as reported by the estimate for the 1924 building program is $466 per seat. These statements of cost are exclusive of expenditures for sites.

Mr. C. A. Ives, state high-school inspector for Louisiana, reports in a recent issue of *School Life* that an investigation which he made as to the relative efficiency of seven-year elementary courses in Louisiana and eight-year courses in two communities of Mississippi and one of Arkansas showed that graduates of the seven-year schools made a higher score than those of the eight-year schools and that a larger proportion of the total school enrollment was in high school in the seven-four systems than in the eight-four systems. The Association of Colleges and Secondary Schools of the Southern States in its Proceedings for 1922 shows that the percent of failure of freshmen in college is less than one percent greater among students from seven-four schools than among those from eight-four schools.

Mr. Ives' report calls again to the attention of workers in education the fact that the number of years necessary for elementary-school work has not been adequately determined and finally settled. Kansas City has demonstrated for more than a generation that the product of her seven-year elementary work holds its own well with the product of the eight-year courses elsewhere. If an adequate study were made of this question, a fruitful source for school economy might be revealed.

Bulletin No. 57 issued by Director Woody of the Michigan Bureau of Educational Reference and Research, announces his testing program for the coming year. In the elementary schools, grades three to eight, the program calls for the use in October and May of the Thorndike-McCall Reading Scale, the Woody-McCall Mixed Fundamentals in Arithmetic, the Monroe Standardized Reasoning Tests in Arithmetic, and a spelling test based upon the Ayres-Buckingham Spelling Scale. In grades seven and eight the Gregory-Spencer Geography Tests and Gregory Tests in American History are likewise recommended. Pupils entering the first grade are to be given the Detroit First Grade Intelligence Test. In the high school emphasis will continue to be placed upon measuring the improvement in freshman English. For this purpose, testing is called for in October and May through the use of the Van Wagenen Reading Scale in English Literature, The Briggs English Form Test, and the Kirby Grammar Test. The program also calls for the testing of entering pupils with the Terman Group Intelligence Test. Achievement tests in "algebra, Latin, botany, chemistry, civics, etc." are also to be given next May to the appropriate grades.

County Superintendent Hays of Peoria County, Illinois, presented his teachers with an unusual type of program in the County Institute this fall. Instead of having lectures on such miscellaneous themes as might fit the whims of the speakers, he decided upon a single theme about which all lectures centered. The theme chosen was "Curriculum Reconstruction," and

the speakers were selected with a view to emphasizing the work that is being done and the relationship of the classroom teacher to the new movement in the several subject-matter fields. Doctor Lyman and Doctor Tryon of the University of Chicago, Doctor McClusky of the University of Illinois, Doctor McLaughlin of the University of California, and Doctor Ashbaugh of Ohio State University, comprised the instructional staff.

This focusing of attention on a single theme was highly pleasing to the teachers who freely expressed their favorable opinion of the superintendent's plan. They declared that the program was the most helpful one they had ever had. The institute attracted the attention of the newspapers of the city to the extent of several editorials. In the opinion of one editorial writer the material given to the teachers by the instructional staff was so practical and so appropriate to the larger social problems of the day that it hardly seemed possible that it was intended for teachers alone.

The California Bureau of Juvenile Research, the central laboratory of which has been at Whittier State School, was discontinued on June 30, 1923, in consequence of the retrenchment program of Governor Friend W. Richardson. The Bureau began in 1915 as a department of Whittier State School under the direction of Doctor J. Harold Williams, who remained in charge until its discontinuance.

In addition to its work at Whitter State School, the Bureau maintained branch laboratories in several other institutions, made psychological surveys of public schools, and conducted training courses for social workers. The staff consisted of ten members.

The publications of the Bureau, including the *Journal of Delinquency* and a series of bulletins, were discontinued with the Bureau. The Journal, "devoted to the scientific study of problems related to social conduct," has been published bimonthly since March, 1916, and was the only periodical in the United States limited to this special field.

Doctor Williams, director of the Bureau and editor of the *Journal of Delinquency*, has become associated with Doctor Aaron J. Rosanoff in the organization of the Los Angeles Diagnostic Clinic for Neuro-psychiatry and Psychology. It is the purpose of this clinic to "provide complete service in the nature of diagnosis and therapeutic recommendations in cases in which the resources of mental science can be of benefit." A consulting staff of medical and surgical specialists has been announced.

The La Salle-Peru Township High School at La Salle, Illinois, will establish in the year 1923-24 a Bureau of Educational Counsel. The object of the Bureau will be to give to the pupils of the school both general and individual intelligence, character, and occupation tests, with a view to proper planning of courses and selection of careers and vocations; to study the cases of "difficult" pupils; and to plan constructive measures for their ethical and social reconstruction. In connection with the Bureau the usual functions of educational, ethical, and vocational guidance departments will be carried

out. The Bureau will also perform for the community represented by the school the functions of a mental hygiene clinic, and will follow up by psychiatric social work the mental health study recently made of all school children in the La Salle-Peru-Oglesby district. In this survey, which was the first mental health survey made in Illinois, 6,500 children were examined and from this number certain problem cases were selected for special medical, psychological, and social investigation. The Bureau of Educational Counsel will be presided over by a trained psychiatric social worker, who will have an assistant and a special office with the proper equipment. While using all the experience and all the results of recent psychological research, the Bureau will have purely educational ends in view and will avoid all pathological connections and the over-emphasizing of abnormality.

This educational work was made possible by the generosity of Mrs. C. H. Matthiessen.

Two University of Iowa Extension Bulletins have reached us recently. Number 91, by Doctor H. A. Greene, is entitled *A State Survey in Silent Reading in Iowa.* The bulletin reports state-wide cooperation in the use of the Monroe Silent Reading Test, involving 232 schools with 75,276 pupils in October, 1921 and 142 schools with 46,800 pupils the following May. The report gives the results by individual schools and grades, together with the semester growth and the percent of schools making certain scores. The bulletin answers the following questions:

1. How well do Iowa school children read silently?
2. How does achievement in this field compare with that of children in the same grades in other states?
3. Do children in larger cities read better than those in smaller cities?
4. How much variation in silent-reading ability as measured by the specified test may be expected within schools of a given group?
5. How much improvement in silent reading as measured by the specified test may be expected as the result of one semester of school experience?

Bulletin Number 92, by Doctor Lee Byrne, is entitled *Latin Tests in Iowa High Schools.* These tests were given in May, 1922, as a part of the program of the American Classical League. Tests used were: the Henmon Latin Vocabulary Test, the Henmon Latin Sentence Test, and the Ullman-Kirby Latin Comprehension Test. The results are reported for students having had two, four, six, and eight semesters of Latin, and involve more than 1,300 pupils with the Henmon tests and 2,700 with the Ullman-Kirby.

Miss Frances E. Sabin, whom a host of former pupils remember as a gifted teacher of Latin at the University of Wisconsin, has been called to organize and maintain at Teachers College, Columbia University, a *Service Bureau for Classical Teachers.* This Bureau is established by the American Classical League and is financed by a special fund granted to the League and by the support of Teachers College.

The aim of the Bureau is to serve as a clearing house for the exchange of ideas on the teaching of Latin and Greek in the secondary schools. Among

the activities which the Bureau will undertake are the following: (1) collecting and arranging such material as may prove of value to classical teachers; (2) distributing a part of this material; and (3) conducting a correspondence department for exchange of ideas and in particular for answering questions from young teachers who need advice or help in their teaching.

We hope the Bureau will find an opportunity to foster research in the teaching of classics. The splendid work which the American Classical League has been doing during the past two years should be put into the hands of some agency which will continue it. We do not know whether the Service Bureau will be that agency; but it is not improbable that the forces which have led to its organization may operate through it to forward some of the investigations which the League has already begun.

The Public School Publishing Company announces the *Standardized Oral Reading Check Tests*, which Dean William S. Gray has been carefully developing for some years. These check tests are arranged in four levels of difficulty. Set I is for pupils of first- and second-grade ability; Sets II and III, for those of intermediate grade ability; and Set IV, for those of upper-grade ability. In each set there are five tests of equal difficulty. Standards for each grade have been carefully determined. The first set of the check tests on which the pupil falls below the standard for his grade is used to determine the nature of his difficulties and the kind of training necessary to develop his oral-reading ability. From month to month succeeding tests of the set are given, and the improvement is noted on an individual record sheet on which the kinds of errors are classified.

Oral reading is an essential training and should not be neglected because the equally essential training in silent reading is being emphasized. As power grows from year to year through childhood for meeting intelligently more and more complex situations of life, oral expression is the natural means of training mental action. Oral reading has this value in every grade of the school in connection with the use of intelligence tests showing growth of mental power.

The Gray Standardized Oral Reading Check Tests are supplied in pads of 100 tests—20 of each of the five tests of a check test set. Twenty individual record sheets are furnished with each pad and four direction sheets. This packet furnishes material for testing each of twenty individuals five times and for making individual records classifying the errors of each pupil.

Bulletin No. 37, 1923, of the Bureau of Education, by C. W. Washburne, superintendent of schools, Winnetka, Illinois, is entitled *Progressive Tendencies in European Education*. Superintendent Washburne spent November and December, 1922, and January, 1923, in a tour of European experimental schools. He visited five such schools in England, four in Belgium, three in Holland, two in France, three in Switzerland, one in Austria, two in Czechoslovakia, and one in Germany. The following quotation will be of special

interest to the readers of our *Journal:* "Our purpose was simply to find out what educational ideas were being carried out; and what was the personal opinion of the people most closely concerned as to the results of the experiment. Not one experimental school in all Europe was experimental in the strictly scientific sense of the word. Miss Mackinder's, in London, was the only one that tried to measure its results objectively. Nevertheless, the ideas back of the schools were frequently based on careful psychological study, and the qualitative results were often obviously good."

The progressive tendencies of European education are classified under seven heads: (1) "new schools"; (2) handwork; (3) self-government; (4) individual instruction; (5) group instruction; (6) freedom; and (7) research schools and classes. The "new schools" are striving to achieve the complete development of the individual. Emphasis on character and body building have a better balance with the academic work than is frequently achieved in our American schools with their shop work and supervised play. The Bulletin presents in brief, compact form a comprehensive picture of the newer educational ideas in Europe.

Superintendent Washburne states that Europe is profiting by some of our experiences, and that we could profit richly by theirs.

The following projects represent some of the major activities in the line of educational research which are being conducted by the Chicago public schools:

1. The elementary schools have been invited to cooperate in a project for improving the technique of teaching reading. The schools entering the project gave the Burgess *Scale for Measuring Ability in Silent Reading* to the pupils of grades IV-B, VI-B, and VIII-B in September. Suggestions have been given to teachers on the method of teaching silent reading. A different form of the same test is to be given to the same pupils at the close of the semester.

2. The *Buckingham-Stevenson Information-Problem Test in United States Geography* is to be given to the graduating class of the elementary schools at the close of the first and second semesters. The purpose of this testing is to measure the ability of pupils in geography as they leave the elementary school.

3. The elementary schools were invited to cooperate in a project for studying the effect of kindergarten training on achievement in the first three grades. In October, 1923, the Pressey *Primary Classification Test* and the Pressey *First Grade Attainment Scale in Reading, Form A*, were given to pupils of grade I-B. Form B of this reading scale will be given to the same pupils at the close of the semester. The Haggerty *Reading Examination Sigma 1* will be given to the same pupils at the close of the second semester. The plan is to follow these pupils through the three primary grades and to compare the achievement of those who have not attended kindergarten with the achievement of those who have attended kindergarten one semester, two semesters, and more than two semesters. Differences in mental ability, as shown by the intelligence test, will be taken into consideration.

4. The Otis *Self-Administering Test of Mental Ability, Intermediate Examination, Form A*, was given to all I-B high-school pupils in September. The purpose of this test is to provide an incentive for using the results of intelligence tests as a basis for classification. Suggestions were made to each high school concerning the use of the results for classification and for educational and vocational guidance.

Some Educational Questions

Professor A. O. Hansen in his monograph on *A Program of Educational Reconstruction in the Early West* lists some of the questions asked in 1834 of the College of Professional Teachers by the trustees of the common schools of Cincinnati. How many of these questions have we been able to answer in the intervening years? How many are still important?

"What should enter into a model schoolhouse; how many teachers should there be in one school; how many pupils should each teacher and assistant have in charge; is there a difference between the spheres of male and female instructors; what should be the number of school hours per day; how frequent and how long should the intermissions be; what modes of punishment bring the best results; what is the sphere of parent and teacher in the responsibility for the conduct of pupils; what is the best curriculum for the common schools and how may it be graded to the best advantage; should promotion be by subjects; how may the standard of schoolbooks be raised and made unifying; do the infant schools justify themselves and how may they be improved; would it be advisable to establish a central high school; should there be a special teacher for penmanship; ought the fiscal agent to advise the trustees; is the monitorial system effective; do premiums and medals raise the quality of education; would monthly or quarterly meetings of teachers with the board for the discussion of problems and ways and means, be advisable; could not the College of Teachers establish an educational library which would circulate and be of service to the schools in general; what should be the amount and graduation of salaries according to the teachers' qualifications and abilities?"

On July 25, the New York City Board of Education voted to request an appropriation of $15,000,000 to use in carrying out its building program—a request which was promptly granted. Only a few weeks before this the same board had secured an appropriation amounting to the same sum for the same purpose. Since 1918 the present Board has had $100,000,000 made available for building purposes.

School men in New York have frequently noticed that during a period of Tammany rule there is always plenty of money for buildings and sites. A Tammany Board isn't so strong on professional stuff but it does like to see a lot of contracts let and a lot of building going on. A reform administration, on the other hand, is proverbially niggardly, especially with money for buildings. It does, however, help in jacking up standards. This suggests that possibly New York City would do well to vote first one crowd into power and

then the other in order to secure the peculiar advantages to be had from each.

The present Board which is so lavish in its expenditure for buildings is asking for an increase of less than $3,000,000 in its operating budget for next year—not more than enough to take care of the estimated increase of thirty thousand pupils, a great part of whom will be in the high schools. Oh yes, $3,000,000 is a lot of money but as an increase to a present operating budget of $95,000,000 and with the probability of some reduction by the Board of Estimate, it is not an increase from which real improvement of service can be financed.

Number one of the series entitled, "Studies in Experimental Education," issued by the University of Sidney (Sidney, New South Wales, Australia) has lately been received. The particular study to which we refer presents the scaling of the elements of opposites tests consisting of 120 words. The author of the pamphlet, Gilbert E. Phillips, assumes the Spearman Two-Factor Theory of Intelligence and asserts that the measuring of one of these factors—general intelligence—may be accomplished by means of opposites tests. With respect to the construction of tests, he rightly says, "The fundamental problem is to know just what the test really does measure, and then to discover to what extent it is a reliable measure. The problem of standardization is a subsidiary and mechanical one." The author believes—on the basis of the two-factor theory—that if the results of two different tests given to the same children exhibit correlation, "they do so because each task involves this general factor of intelligence." Accordingly, he finds the measure of validity to be the degree of correlation with other mental tests. Presumably he finds a high correlation between his opposites tests and other mental tests.

The method of standardizing each of the words of his opposites tests is more or less familiar to American readers. He obtains through the percent of correct responses on each word a P. E. value on the assumption of normal distribution and equal grade variation of the ability to solve opposites. He locates a zero point and computes a difficulty value for each of the test words. The easiest words are *up* (difficulty 2.1), *good* (difficulty 2.2), and *yes* (difficulty 2.3). The hardest words are *boastful* (difficulty 8.2), and *courage* (difficulty 8.2).

The Economic Status and the Intelligence of Children

The 251 cases here reported represent all the children of the first and second grades of the Eugene city schools and the third, fourth, and fifth grades of one of the buildings. The Stanford-Binet test was given, under standard conditions, by a small number of the graduate students of the school of education who had had previous training in the giving of tests. Among other data the parents' occupations and social positions were secured. Because of the relatively small number of children involved, the classification here given is not that of the occupational groups. The day's wage was made the dividing line. Accordingly, in the one group, designated hereafter as group A, we have

the children whose parents are on a salary basis, have some business, or other source of income than that of the day's wage. In group B, are the children whose parents are limited in income to the day's wage.

There are 142 boys and 109 girls. The distributions of the groups are according to the Terman classification and tend to approach normality.

	Feeble Minded	Border Line	Dull	Normal	Superior	Very Superior	Near Genius
Boys	4	10	28	73	21	5	1
Girls	2	4	19	62	16	6	..
Total	6	14	47	135	37	11	1

Disregarding sex differences, the average I.Q. of group A is 109.7 and that of Group B, 92.5, both within the normal range (90-110) but one near the upper and the other near the lower level. There are 44 boys and 49 girls in Group A. Group B has 98 boys and 60 girls. In group A the 44 boys show only two below the normal range of intelligence while the 98 of Group B have only eight with an I.Q. indicating superior intelligence. With the girls the figures are just as striking. The 49 in group A show only five who are below the normal range. On the other hand the 60 in group B have only five with an I.Q. above 110. The entire distribution of both groups is as follows.

GROUP A

	Feeble Minded	Border Line	Dull	Normal	Superior	Very Superior	Near Genius
Boys	0	0	2	25	11	5	1
Girls	0	0	5	27	11	6	0

GROUP B

	Feeble Minded	Border Line	Dull	Normal	Superior	Very Superior	Near Genius
Boys	4	10	26	50	8	0	0
Girls	2	4	14	35	5	0	0

Children are graded by the letters A, B, C, D, and E, signifying very superior, superior, average, poor, and very poor. The following table shows the distribution of the groups on the basis of average school marks. Three divisions superior, average, and poor are given in percents.

	Superior	Average	Poor
Group A boys	50	34	16
Group B boys	42	26	32
Group A girls	67	13	20
Group B girls	43	34	23

The A group boys and girls are found in greater numbers in the superior grade divisions. The B groups are more evenly divided. In a study by Mrs. Edmonson[1] it was pointed out that those children with an I.Q. under 100 who are making school marks equal to those of the children above were quite a little older and in many cases were repeaters. This, together with the probable tendency of the teachers to grade high explains in part at least, the fact that

[1]Edmonson, Margaret B. "A mental survey of first-grade school pupils," *Pedagogical Seminary*, 27:354-70, December, 1920.

a relatively large proportion of the pupils in group B are making superior marks when only a very few of them are above the normal range of intelligence as shown by the tests.

No new light is thrown on the problem of heredity. The data presented may be interpreted favorably to their interests by those who believe that the only adequate explanation of the difference shown is on the basis of inheritance and also by those who are inclined to think that the environment is the greater factor. One may feel that those parents who have obtained a permanent income sufficient to establish a good home are of superior ability and that their children are naturally the better endowed. Or one may believe that the children of the day laborer, possibly because of the smaller wage, have fewer books and magazines, hear fewer current topics discussed and in general have fewer opportunities. It must be remembered, however, so far as our data are concerned, that the distinction between the environments of the two groups, excluding that within the home, cannot be sharply drawn. The two classes of children are found in the same community, living side by side and attending the same schools. With many of the parents of the children of group B, the earnings over a given period are greater than those of many in group A for the same period of time. Whatever elements enter in, the fact that in group A only 7.5 percent are classed as dull and below and 37 percent as superior while in group B, 32 percent are regarded as dull and below and only 8 percent as superior, would it seems to me justify the inference that heredity is at any rate a very important factor unless our tests are more tests of achievement than of native ability.

Whatever be the merits of the controversy our data justify the belief that there is a relationship between the economic standing of parents and the general level of intelligence of the offspring and that this relationship is reflected in the quality of work which the children do in school.

B. W. DeBusk

University of Oregon

Educational Research Association

(HARRY A. GREENE, *Secretary and Editor*)

If the amount of material submitted to this department is at all indicative of the amount of research actually being carried on, the number of problems encountered, the constructive thinking done by members of the Educational Research Association, the future of educational research as represented by this organization is black indeed. Evidently the postal card request mailed to each member and the general appeal for suitable contributions presented in the May number of the *Journal* were not read, or at least were not taken seriously. Four or five responses were received and promptly utilized. It looks as if the editor would be forced to construct his department out of thin air unless more of the members take his appeals seriously and realize that after all *this is their department.*

At the time the present incumbent came into office he labored under the notion that it would be possible to make this department serve at least two purposes. Since it is a relic of the days before the *Journal* itself came into being it must still serve as the avenue through which Association business will be presented. In addition it was hoped that it might become a sort of clearing house to which members of the Association would naturally turn for the presentation of communications, questions, and suggestions of all kinds related to the field of educational research. Hundreds of tentative experiments and preliminary investigations are lost to the workers in the field because it is thought they are not worth publishing. Much lost motion exists in the field of educational research today because investigators are too prone to work independently and because they fail to report indifferent or negative results. The solution lies partly in seeing to it that these seemingly unimportant items are collected and recorded in form available to other workers in the field. If you consider such a project worth while, do your part.

It may not be amiss to call the attention of members to the fact that our fiscal year ends January first, and that members whose annual dues remain unpaid after that time are not in good standing. Special notice will be sent to each member in advance of that time but if any feel prompted to remit early without notice, such action will be appreciated. Checks for $4.00 should be sent to Educational Research Association, H. A. Greene, Secretary-Treasurer, Iowa City, Iowa.

The Bureau of Educational Research of the University of North Carolina, under the direction of Doctor M. R. Trabue during the past school year carried

on an extensive testing program in many schools in the state. A uniform series of standard tests was given to the graduating classes in a number of schools. The results of this program are shown in Research Bulletin Number 1, July, 1923.

Mr. J. Freeman Guy, director of Research and Measurements, Pittsburg, Pennsylvania, has submitted a copy of the Pittsburg Arithmetic Scales in three forms. Forms B and C were constructed statistically equal to Form A but have not been standardized in actual practice. Age and grade norms are based on returns from about 35,000 cases. A full report of the construction of the scales is presented in the author's dissertation published by the University of Pittsburg.

Professor Fletcher Swift of the College of Education, University of Minnesota, has accepted an invitation to deliver addresses on School Finance at the Annual Texas State Teachers Association at Fort Worth, Texas, on November 29 and 30. Professor Swift will also deliver an address before the College of Industrial Arts at Denton, Texas, on the subject of "Adequately Financing a State System of Education."

Mr. J. L. McCrory, assistant superintendent, Omaha, Nebraska, was invited to speak before a teachers association meeting at Ketchikan, Alaska, in September.

A bulletin reporting the results of a state survey of silent reading in Iowa has been issued recently by the Extension Division of the University of Iowa. Over 230 school systems cooperated in giving Form 1 of the Monroe Silent Reading Tests in January and 142 schools gave Form 2 in May. More than 75,000 school children took part in the January testing. The data are so arranged as to show the score in comprehension and rate for each grade of every school taking part in the testing program. Each school received a key permitting the identification of its own data. The results are also thrown into composite distributions for schools located in cities of different size; and group norms in both rate and comprehension for different classes of cities are presented. In addition, the results from the two forms of the tests are equated and so treated as to reveal the amount of improvement in comprehension resulting from one semester of school experience.

An Investigation of a Typical Rural Community in Iowa

The Laura Spelman Rockefeller Foundation has made available certain funds which Doctor B. T. Baldwin of the University of Iowa Child Welfare Station will use for the purpose of conducting an extensive investigation of a typical section of rural territory in Iowa. The study is to be carried on for three years and will involve the complete analysis of social, economic, mental, educational, and physical aspects of the community life in two townships in Iowa County. The investigation in all its phases has the hearty support of the

various departments in the University, and has at its disposal specialists in each field. A social worker has been in the community for a number of weeks gathering significant data. General mental tests have been given and are now being followed by individual mental examinations. A complete program of educational testing will follow. In addition to this a careful survey of the physical aspects of the school plans is also planned. The special physical examinations and clinics will be conducted by members of the staff of the College of Medicine. The results of this study should be extremely valuable from the standpoint of the educator, the sociologist, and the student of child welfare.

Additional Data from Consecutive Stanford-Binet Tests

(Contributed by Doctor B. T. Baldwin)

The following data collected by Doctors Bird T. Baldwin and Lorle I. Stecher of the Child Welfare Station, University of Iowa, are the results of further tests by the Stanford Revision of the Binet Scale of 143 cases reported by them in their *Mental Growth Curve of Normal and Superior Children Studied by Means of Consecutive Intelligence Examinations.* This is Volume 2, Number 1 of the University of Iowa Studies in Child Welfare.

One year after the above report was made 32 of the 36 cases who had received five previous examinations had a sixth; 40 of the 42 cases who had had four previous examinations had a fifth; 41 of the 51 cases who had had three previous examinations had a fourth; 31 of the 56 cases who had had two examinations had a third; and 64 additional cases with two examinations were included.

COEFFICIENTS OF CORRELATION FOR I.Q.'S BOYS AND GIRLS

Examination Number	Examination Number				
	1	2	3	4	5
2	.850 ± .031				
3	.738 ± .051	.846 ± .031			
4	.779 ± .044	.802 ± .040	.910 ± .019		
5	.817 ± .037	.815 ± .037	.839 ± .033	.918 ± .017	
6	.812 ± .038	.751 ± .049	.796 ± .041	.866 ± .028	.944 ± .012

These new data confirm the findings of the previous study that for practical purposes the I.Q. remains sufficiently constant for a group as a whole, but that the individual records show fluctuations which are smoothed out in obtaining general averages. The amount of this fluctuation is evident in the tables of original data. The above table shows the inter-correlations with each successive examination. The correlation between the fifth and sixth examination is the highest (.944) which probably means that the individuals have become thoroughly stabilized within the group.

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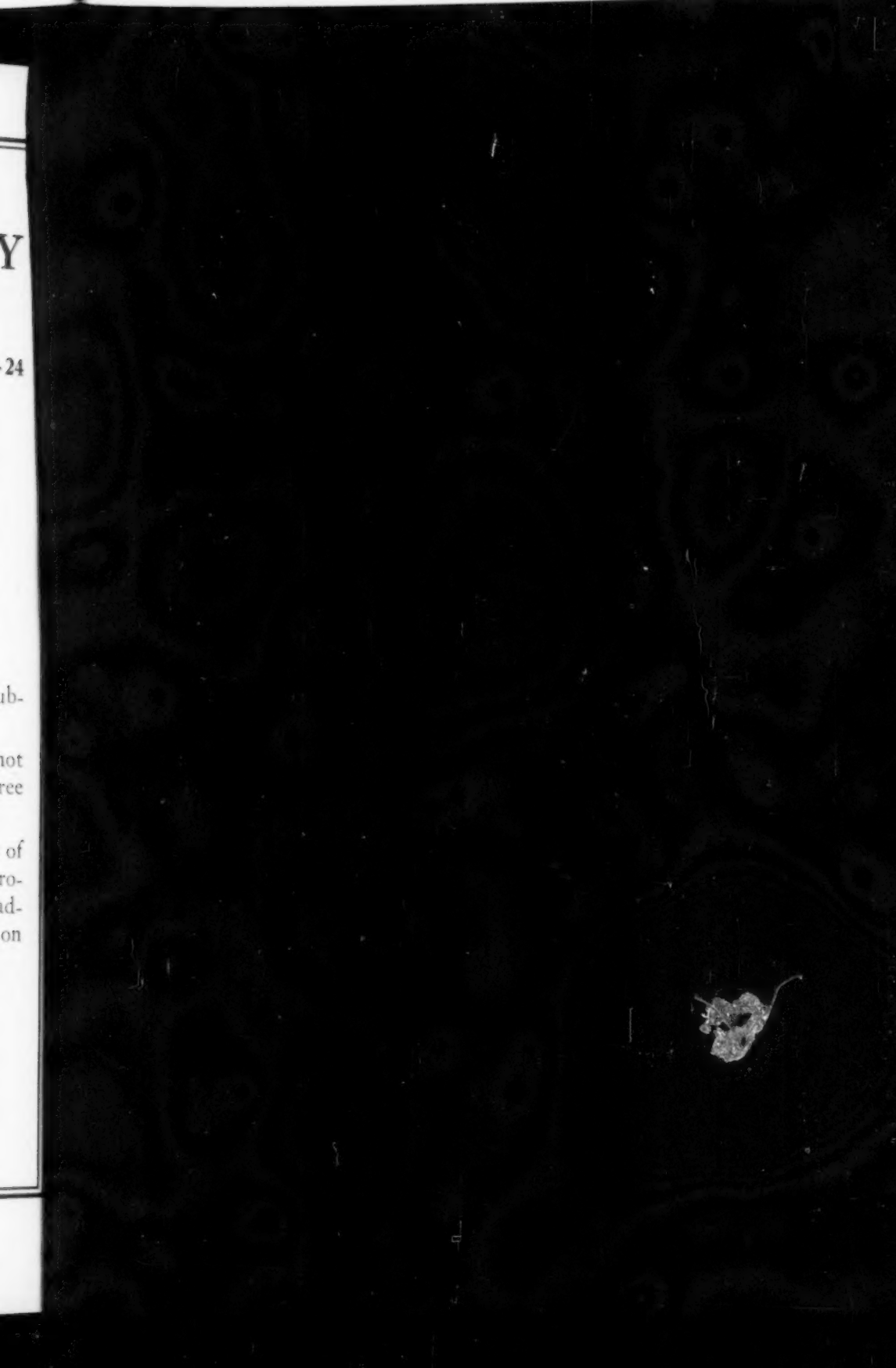
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